

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., MAY, 1909

SUBSCRIPTION PRICE \$2.00 PER

LIBRARY No. 1

YEARLON GENERAL'S OFFICE

OCT. 20. 1910

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee Shelbyville.

C. H. DAVIS, M.D., East Tennessee Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D. Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan.

GEO. H. PRICE, M.D. Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D. Nashville.
Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D. Covington.
Alternate, J. D. BREWER, M.D. Dyersburg.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman* Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

H. H. MCCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

WI
TE417J

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. McNEIL, M.D., 2 years, Secretary....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSON COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. McCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D. Maury City.
 Secretary, S. E. McDONALD, M.D. Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D. Nashville.
 Secretary, H. M. TIGERT, M.D. Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D. Smithville.
 Secretary, W. B. PARKER, M.D. Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D. Dickson.
 Secretary, W. S. SCOTT, M.D. Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D. Dyersburg.
 Secretary, E. L. RAWLES, M.D. Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D. Galloway.
 Secretary, COMPTON N. CROOK, M.D. Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D. Humboldt.
 Secretary, W. C. McREE Trenton.

GILES COUNTY.

President, W. E. WILSON, M.D. Pufaski.
 Secretary, JAS. K. BLACKBURN, M.D. Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D. Moshelm.
 Secretary, S. W. WOODYARD, M.D. Greeneville.

HAMBLEN COUNTY.

President, W. E. HOWELL, M.D. Morristown.
 Secretary, T. L. SMITH, M.D. Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D. Chattanooga.
 Secretary, H. P. LARIMORE, M.D. Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D. Middleton.
 Secretary, ROBT. W. TATE, M.D. Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D. Brownsville.
 Secretary, JAS. L. EDWARDS, M.D. Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D. Lexington.
 Secretary, C. H. JOHNSTON, M.D. Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D. Como.
 Secretary, J. H. McSWAIN, M.D. Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D. Centreville.
 Secretary, JNO. S. BEASLEY, M.D. Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D. Waverly.
 Secretary, J. T. COOLEY, M.D. Waverly.

JACKSON COUNTY.

President, S. B. FOWLER, M.D. Gainesboro.
 Secretary, E. W. MABRY, M.D. Meigsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D. Jefferson City.
 Secretary, B. M. TITTSWORTH, M.D. Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D. Knoxville.
 Secretary, S. H. HODGE, M.D. Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D. Tiptonville.
 Secretary, J. D. ALEXANDER, M.D. Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D. Ripley.
 Secretary, W. D. MILLER, M.D. Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D. Kelso.
 Secretary, J. M. CULLUM, M.D. Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D. Loudon.
 Secretary, T. J. HICKMAN, M.D. Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D. Jackson.
 Secretary, E. K. McNEIL, M.D. Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D. Chapel Hill.
 Secretary, T. E. REID, M.D. Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D. Mt. Pleasant.
 Secretary, M. M. COOK, M.D. Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D. Madisonville.
 Secretary, J. E. DAVIS, M.D. Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D. Clarksville.
 Secretary, J. C. MORRISON, M.D. Clarksville.

OBION COUNTY.

President, P. N. MATLOCK, M.D. Mason Hall.
 Secretary, JAS. F. DARNELL, M.D. Union City.

OVERTON COUNTY.

President, _____
 Secretary, W. A. REED, M.D. Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D. Isabella.
 Secretary, A. W. LEWIS, M.D. Copperhill.

PUTNAN COUNTY.

President, W. S. FARMER, M.D. Chestnut Mound.
 Secretary, L. D. J. ENSOR, M.D. Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D. Evensville.
 Secretary, W. B. WILLIAMS, M.D. Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D. Cardliff.
 Secretary, G. C. G. GIVAN, M.D. Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D. Greenbrier.
 Secretary, B. F. FYKE, M.D. Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D. Murfreesboro.
 Secretary, RUFUS PITTS, M.D. Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D. Newland.
 Secretary, A. A. BAIRD, M.D. Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, J. T. CARTER, M.D.....Erwin.
 Secretary, E. B. HOWELL, M.D.....Unicol.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., MAY, 1909

LIBRARY No. 1

SURGEON GENERAL'S OFFICE

OCT. 10. 1910

208005

PRESIDENT'S ADDRESS.

"Hippocrates—Past, Present, and Future."

B. D. BOSWORTH, M. D., KNOXVILLE.

We all love the Past.

We love it from the earliest moment, in which the hammer of Fate strikes the spark of memory from the flint of the mind, to the very *last hour*, in which, as we lower our sails upon the ultimate isle, the Death Angel beckons to the thitherward shore.

We love the *yester-days*—the yuletide days. We love the schooldays, the holidays, the *dog days*. We love the bright days, all sunshine, and the days in which *some rain* did fall. We love *all* the days "*that are no more.*" We love them not alone for the *joys* that were ours, but for the *agonies* we endured. *Sweet* were those days of *brass-toed boots*, bare feet, chillblains and stone bruises! Forty *years* have passed quicker than the memory of those walnut stains, fast rabbits, faster dogs and tin cans, mutilated birds' nests, robbed orchards and stolen water-melons.

Dear old days of pumpkin pie, red-hot hair brushes and warm poultices!

Our souls thrill *still* at the mere memory of the old wooden bath-tub, "the old oaken bucket," the axe at the wood pile.

And with special ecstasy do we recall those cherished days "when men were loved who never played football, and

women were adored in spite of the hoop-skirt."

And then come those later days when with thoughtful mein and purpose firm, we took up the tangled skein of college life and traversed the halls of learning in the dear old Alma Mater, gradually and almost imperceptibly imbibing and absorbing *lessons*, which fell from patient lips—alas, now silent—lessons upon which we based our first claim on knowledge. And then the Lectures, the Clinics, the Hospitals!

Who among us will ever forget that first weird year's experience in an atmosphere of chemicals, skeletons and cadavers—of books we scarce could understand, of lengthy discourses couched in language which, for all we knew, might have been Sanskrit or Hebrew.

Who among us but remembers the soul-searching sound of the *surgeon's* saw as it severed that first bone; or the dead swoon that followed that first sight and smell of blood, issuing from infant vessels, opened by his kindly-cruel steel?

Have we all recovered yet from that long list of terrible maladies, which we contracted one by one, as fast as presented by the artful professor, and which inflicted imaginary torture quite as appalling? Who among us but remembers how the very soul within him oft grew sick from sheer discouragement and despair and how *often* we wished we were back home—*with the hoe and the plow?*

—how these moments passed, and how at last came the *light!* How the storehouses of knowledge opened, in time, as to the magic touch of some *wizard* hand, and with confidence and zeal we were finally enabled to take a place, humble though it were, in that shop wherein is forged man's redemption from disease and death.

And then Commencement Day! Who that has participated can ever forget the accessories of Commencement Day? Ever forget that supreme moment when we stood forth upon the platform, crowded with the virtue and learning of city and State, as candidates for that *aemc* of all college honors—that *degree in Medicine?* Or how, having tucked this emblem of power under the arm, we proudly stalked forth into the world—profoundly convinced that *no more men need ever die?*

Over the period immediately following—over those early years in our practice—I draw the veil of charity.

I'll not ask you to live them over, even in memory. I'll not remind you of the fervent prayer that ascended to the altars of high heaven during that first stirring race with the stork.

I'll not recall the "pang, the agony, the doubt" that filled you as, single-handed and alone, you first grappled with woman's Gethsemane, and strove to comfort in the trying circumstances of that *first* ordeal, in which the plaintive song of the whip-poor-will in the hush'd fields was drowned by the lusty call of Uncle Sam's *new soldier*, training his first guns upon the *towering* bulwarks in the Milky-way.

I'll not wring your heart again with the anguish of that first case of erysipelas, nor raise again every hair on your head with the recollection of that first encounter with eclampsia. That first fracture you set and the lame, wan phantom, which pursued you so long, is likewise forgotten, together with all those darker

passages in which the hand of death did seem to triumph at every turn and in every *dream* you pressed down the eyelids over sightless orbs and pined once *more for the plow and the furrow.*

Oh, *yes!* We all love the Past.

And not *alone* the past of our *own* lives, but the past that lies beyond them. The human mind grows *weary* in contemplation of the bewildering series of *cosmical* changes by which the ages have wrought the sublime completion of our own sweet earth with its emerald isles, its fertile plains, its majestic mountains.

The human spirit grows restless at the mere memory of "Great Cæsar, dead and turned to clay," and pauses still in mute admiration of the world-taming Napoleon. But the genius of every age has paid unstinted homage to its Hippocrates. His is the star that never *sets*, but dazzles on and on until Eternity affixes the seal.

History is man's diary, civilization is *his measure*, and his monuments and muniments are but trophies of a *succession* of victories accomplished by the *triumphant* march of human development.

"Oh! what a miracle is man!—Triune in composition,

Passionate in his search for knowledge.

In the obscure conditions about him feeling his way in his gropings *towards* the light.

Fit subject for the sleepless and deathless solicitude of *two worlds.*

Greater than the Cross!

Worthy the spilled blood of a God!"

The nineteenth century was *fertile* in men of genius, and this *ninth* year, alone, of the twentieth century commemorates the one hundredth anniversary of a *Darwin* and a *Mendelssohn*; of a *Tennyson*, a *Poe* and a *Holmes*; of a *Gladstone* and a *Lincoln*.

Mighty Gladstone! who didst make old England

"To blossom as the rose."

Mighty Lincoln! Who, midst gigantic

thoughts and deeds did still find time to deal Homeopathy her blackest eye. The nineteenth century, more than all before her, was productive of great physicians and great surgeons, many of whom have bidden for immortality.

'Twas just one hundred years ago that Ephriam McDowell, in the backwoods of Kentucky, performed the world's first ovariectomy. 'Twas just one year later, in the deep forest of East Tennessee, that Dr. Wm. H. Deadrick, of Rogersville, accomplished the first successful excision of the lower jaw.

Just *sixty years* ago came Morton, of Massachusetts, with *either anaesthesia*, and, a moment later, Oliver Wendell Holmes, with his clean-handed midwifery.

All future years will hold in honored reverence such names as Sims and Sayre and Gross and Flint, and Drake and Senn and, last but not least, our own beloved Richard Douglas.

By the twilight of their history I predict tomorrow's dawn—

"For I doubt not through the ages
An increasing purpose runs,
And the thoughts of men are widened
By the process of the suns."

But before "I dip into the future," I must pay my respects to the Present, with all its changes. To Hippocrates as he appears and is today.

What's the matter with the Present? Have we not withstood the ravages and decay of the inveterate ages? Is not our fame already blazing in *letters of fire* upon the pages of history? Have we not piled achievement upon achievement mountain high, until the welkin rings with praise?

What's the matter with the Present?

Have we not reduced the mortality of typhoid fever to two per cent and its average duration to fourteen days?

Have we not learned at last to treat pneumonia, "That Captain among the men

of Death," with abundance of cold oxygen, in God's own admixture, until we rescue its victims as "brands from the burning?"

What's the matter with the Present?

Have we not sounded the death knell of the Klebs-Löffler bacillus and many others with antitoxin and serum-therapy? Have we not thrown oil upon the troubled waters of our own beauteous Southland—

"Where the white bursting cotton in the moon-
light
Shimmers with silver,"

until the fangs of the Anopheles and Stegomyia have been despoiled of their venom—the dread curse of Malaria been all but annihilated—Yellow Fever, as a slimy serpent, been driven back to her pestilential swamps to perish amid her own pollutions, and *Our Nation* thus enabled to triumph over all the principalities of the earth in the assured success of her momentous undertaking to connect two oceans by means of the Panama Canal?

All honor to Dr. Gorgas and his valiant clan!

What's the matter with the Present?

Have not our surgeons and gynecologists attained a degree of knowledge and skill little short of the supernatural? Toying with our very vitals as with chessmen on the board. Mending the broken vessels—tearing away the fruits of accident and disease, literally restoring the stricken darling to frantic parents, the bruised mother to her helpless babes, the loving spouse to the devoted partner. Have we not advanced along all lines until we ourselves oft pause in absolute astonishment and awe?

Then *is* there aught that's *wrong* with the Present? I answer, Yes! Never, perhaps, in all the annals of The Profession, has *Empiricism* soared upon *casier* wing or made *loftier* flight.

Despite all our efforts to the contrary—

at every corner of every *field* there sits a sated vulture.

Ever and anon the blue skies above us are blackened by *flocks* of these foul birds of prey, that flap their filthy wings o'er helpless ignorance and bathe their reeking plumage in the life-blood of God's suffering children.

At no period in our existence has this same *infamous* species received greater countenance or enjoyed more substantial support from higher intellects or wealthier classes than in the present hour.

"To follow foolish precedents and wink
With both our eyes, is easier than to think."

Almost every day some eminent jurist or able judge (at the very tribunal of justice) asks us, without so much as a bat of his learned eyelid, to besmire our divine art by a *conglomerate* mixture of Osteopathy, Homeopathy, Spiritualism and Peruna.

The day rarely passes that some splendidly cultured client does not, with consummate nerve, ask our sanction and approval of a recent rub-down at the hands of a cult without a name; or that some proud Southern mother does not tell us of sending her pure, sweet, innocent, beautiful little girls to almost certain contamination from fingers unfit to lace their tiny shoes.

Not a sun that sets not somewhere upon some purified, saintly preacher who has declared his independence of all things scientific, and from the pulpit of his church—from the tribunal of his God—hands out his photograph to ornament the *lurid* columns of some *yellow* newspaper; thus proclaiming to the Public that he is either a drunkard on "Duffy's Malt" or else the drivelling dupe of "Lydia Pinkham."

"Oh! shame, where is they blush?"

Such *preachers* should be shorn of their

vestments; such *newspapers* should be "*read with tongs.*"

But—my brother! Let not little things like these arouse your indignation or disturb the even tenor of your way—

"Imposture has always worn a crown."

Superstition has always been our most relentless enemy.

In all the ages there have been intelligent men and adorable women, who believed in spooks and ghosts and signs and wonders.

For thousands of years people have nursed a penchant for the impossible—a leaning toward the unbelievable.

Some of our own (remote) ancestors worshiped snakes and birds and beasts, and bowed their heads to wooden gods and golden calves.

It behooves us, therefore, to possess our souls in patience—and to continue the exercise of forbearance and leniency toward our beloved American People in their *fabled* fondness for humbugs and chicanery.

No! we will never *surrender*; we will not falter in our fealty; we will not waver in our purpose to teach them better things. Our people shall be redeemed from this ignoble thralldom, and it devolves upon their physicians to educate them, to illuminate their busy brains with "light—more light." They must be brought to see and know the truth.

They must be forced to *acknowledge* that truth is ever in harmony with nature and with nature's God.

That truth is eternal as light and love.

And we ourselves must find solace in the perfect assurance that;

"Truth crushed to earth will rise again;
The eternal years of God are hers—
But error wounded writhes in pain
And dies amidst her worshippers."

Is there aught that's wrong with modern Hippocrates himself?

Again I am constrained to answer—yes. His house is divided against itself and the discord around his hearthstone explains his many falls.

His strength is not the *sort* that's born of *perfect union*. His success is not the *kind* that *crowns co-operation*. His *ethics* are *evanescent* and *adynamic*, and his disposition to get all four feet in the trough and disqualify his younger and perhaps hungrier confreres is quite pronounced.

There's not enough kindness—not enough generosity—not enough sociability and good fellowship. There is too great enmity, too much bitterness and strife.

There's too great a tendency toward the befoulment of our nest.

There's a lack of integrity sometimes, a dirth of honesty often and a spirit of *greed* nearly always.

Is it any wonder, then, that Public Opinion so often writes *Failure* after our names—and writes it true? Doctors! We *must* rise above such pusillanimity. We *must* keep the escutcheon clean. We must cultivate courage. We must make conquest over our own bosoms and eliminate all the ulterior motives they may harbor.

We *must* find strength to resist temptation—in whatever guise. We must bring ourselves to realize that the collection of fees is not our mission, but rather to bend over the racking couch and discover how to disarm disease and undo the mystery of pain.

We must strive ever to build up for ourselves and *each other* a real, living, vital character. We must clothe that character, as far as possible, in all the attributes of physical, mental and moral power. We must present ourselves before all men as a type and a pattern of true, intrepid and world-embracing manhood, carrying at last into the presence of our God a reputation spotless and undefiled—the bloom of an immortal soul.

THE FUTURE.

It is impossible to disconnect from an occasion like this a crowd of speculations as to the Future.

To be an optimist after twenty-two years' wandering amid the mazes of the mysterious art to which our lives are welded is an achievement in itself; yet I know full well it is optimism you require.

I know full well that you will tolerate no suggestion which might conflict with a flawless guarantee that our Future will be *all golden with the sun-ripened fruit of successful exploit and brilliant accomplishment*.

Following an immortal instinct, deep within the spirit of every apostle of science—inspired by an ecstatic prescience of glories just ahead, and searching ever for the crystal springs at which to allay a thirst unquenchable, your servant has never known pleasanter occupation than in stealing moments from the tangled lottery of life in which to ponder and to *dream*.

To dream! Not that any of us ever “dwelt in marble halls” or yet that our aftermath might find space among illustrious heroes in some Hall of Fame. But that somewhere in the paltry span which measures our own grasp upon the years to come, we may be permitted to behold the “dawning of the morning”—a wonderous, roseate, rainbow-tinted dawn, which shall herald to the world the birth of the Medical Millennium, that happy halcyon period of a thousand years, in which all things shall be altogether lovely and we radiant and triumphant, may hold a place among the proudest of the proud.

And why not? Will we not then have reached the topmost rung of the ladder to the clouds, and from the lofty pinnacle be dispensing, among an emancipated

people, mighty miracles of health and joy?

Will we not then be revelling in the reaping of the richest harvest ever garnered by mortal man, from seed sown in soil bedewed by the brow-sweat and fertilized by the heart's blood of the faithful, who have passed over the river and are resting "in the tongueless silence of the dreamless dust;"

"Under the shade of the trees."

As I lift the mystic mantle and gaze into the Future, I seem to see the realization of *every* dream.

Our beautiful land will have been purged of its rats and cats and mice and *flies*—because every County Court in Christendom had placed a *price* upon their heads, that was liberal enough to interest the *small boy* in their extermination.

The vexatious question of vivisection will have found wise adjustment by an enlightened people turning over to us, for experimental research and investigation, all her condemned criminals.

Medical experts and alienists in great murder trials will no longer be the sport of facetious exponents of our brother profession.

The knotty problems of tuberculosis will have been transferred from the tops of Florida hemlocks and tents upon the Western hills—perhaps—to find complete solution in cloud-kissing airships. The chaos of ignorance will have been illumined by the arrowy flash of the Röntgen Ray. Nature's every hidden nook and cranny will have divulged its secrets to Microscopy's searching glance—all her vast stores will have been ransacked by earnest, patient endeavor and been made to yield the healing balm for each separate one of the twenty-four hundred ills that flesh is heir to.

The physician will carry in the hollow of his hand a few atoms of Radium, a few

drops of Serum; the Surgeon, cutting everything *except* his prices, will wave a silver scalpel in one hand, while the fingers of his other clutch lightly a human heart and a golden needle with its scarlet thread; the specialist will deal out perfection in dainty morsels; Death himself shall stand at bay, and the "Harp with a thousand strings" will keep in tune forever.

Envy and malice will have vanished. Selfishness and fraud will have been dispelled like the clouds before the noon-day sun.

Quackery (*in the societies and on the outside*) will have been crushed to earth to rise no more. Avarice, with drawn dagger, will strike no more at the heart of charity, no more will corruption pollute the white throat of Purity with foul fingers.

The Emanuel movement will have moved hence—*far hence*.

Purgatory will have swallowed the "Homeop" and the "Osteop," and hell will have burned the nameless criminal—nameless here forevermore. Never again will the "Silver cord be loosed or the golden bowl be broken, or the pitcher be broken at the fountain," for the voice, whose sublime music falls upon the enraptured ear like the intonations of Fate, will have smitten the *abortionist* like a glance of Destiny. The smell of green money will have lost its sweetness and its mocking leer will no longer fascinate and enthrall.

Awake! oh man of science!

I sound the tocsin that must dispel hibernal slumber and I usher you into a *glorious summer* that has warmed away "the winter of thy discontent."

Over all and under all are spread the God-like principles of brotherly love.

I hear the huzzas of untold millions.

I see thee drinking in their plaudits—wearing their laurel and their ivy—be-

cause thine is a ministry of mercy and a gospel of charity.

One last word: I say to you, if you've never turned a stone, henceforth leave no stone unturned. Any common fellow may follow a beaten path; it takes a hero to blaze a new one. We live in an age of great possibilities—perhaps the greatest the world has ever known.

He who wills can do.

The greatest acts are yet to be performed,
And the greatest doctors are yet unborn.

The sweetest song has not been sung;
By the *largest* mosquito we've never been stung.
The vilest bacillus still lies *deep*,
The cancer microbe is yet *asleep*.

The Great White Plague has never quailed;
Our mightiest efforts 'gainst it have failed.
The sharpest knife, the longest seam
Is but the vision of a dream.

The speedy, skillful surgeon, too,
Has yet to prove what he can do.
Our giant schemes are *still* unborn;
From natures bosom *still* untorn!

Think, then, ye men of mighty worth,
Who say there's naught to do on earth.

TENNESSEE STATE MEDICAL ASSOCIATION.

Minutes of the Seventy-Sixth Annual
Meeting, Held at Nashville, April
13, 14 and 15, 1909.

First Day—Morning Session.

TUESDAY, April 13, 1909.

The Association met in the House of Representatives of the State Capitol at 10 a. m., and was called to order by the Chairman of the Committee of Arrangements, Dr. H. M. Tigert.

Prayer was offered by the Rev. W. M. Anderson, pastor of the First Presbyterian Church, Nashville.

Hon. J. S. Brown, Mayor of Nashville, was introduced, and delivered the following

ADDRESS OF WELCOME ON BEHALF OF THE CITY.

Mr. Chairman, and Members of the Tennessee State Medical Association: You have met here today for the seventy-sixth time in the life of this organization. When you think for a moment of the evolutions which have been perfected in those seventy-six years; when you think of the tremendous advances in every line of human activity, you as an Association may feel proud that you and your profession have led in the vanguard of progress. No profession has made such tremendous strides

as the medical profession, and no year has exhibited a greater activity in this profession than the year which is just closing. When we think for a moment that when this organization first began its existence, plagues were all over the face of the earth, and that men, communities, nations, stood in dread of these great plagues which devastated countries, and were looked upon as a dispensation of Providence, as a curse, as the wrath of God, we have reason to be grateful that these same plagues today are absolutely unknown. They have been mastered by the progress that has been made in your profession. In our short lives we can remember the dread of the terrible disease, yellow fever. It was a scourge which, when begun, no man knew where it would end. In my own life and in yours the world stood aghast at the terrible havoc of such a disease, and yet today, though the progress, through the advancement made in your profession, yellow fever is dreaded hardly more than measles.

I noticed in some of the journals the progress that is being made today in the surgical branch of your profession. Years and years ago, when a poor man was so unfortunate as to break his arm, it was a question whether the palm of his hand would be to the front or to the rear when he got well. Today, if I should lose my leg, some good doctor comes along, cuts somebody else's leg off, and molds it on to mine, If my liver should cease to operate, then they get the liver of someone else, and give me another. (Laughter) I say, of all the progress that has been made in all the branches of human activity, the progress made in your profession stands in the forefront. Is it, therefore, strange

that we of Nashville should be glad to welcome such an organization to our city? We feel that you are not strangers, but we want to impress upon you that the keys of the gates of the city are in your keeping; that whatever of hospitality we have, the good old city of Nashville is yours. Do what you may. You have the liberty of the city, but there is one point that I want to suggest to you to do which comes very closely to me in my professional official position. I have learned one thing in reference to members of the medical profession, and it is this: your profession has ceased to be a private institution. The health of a community, the health of our country, is of more importance than all the other phases of government. All the government, in fact, has for its basis is a perfect health system. If, as a matter of fact, your Health Department is inferior, your death rate great, there is no such thing as good government. If, on the contrary, your Health Department is efficient, your death rate low, it means municipalities, it means in State and in government, good government, and you, gentlemen, have passed out of the category of private individuals. You occupy a position before the world and before the public of public servants. Your duty to the public is just as great or greater than your duty to the private individual, and I am glad to say that in Nashville the medical profession realizes that fact. They are wide-awake, active; they lend their coöperation, their earnest support to the government in its desire and in its effort to reduce the death rate, to stamp out disease, to make us a happy, contented, healthy community. I want to say, that I believe there is no profession that lends more to the public, that is more filled with charity and more good deeds than is the medical profession, not only in this State, but in the world. No one knows your sacrifices.

In welcoming you to the City of Nashville, I want to say that we have no mean city. Here in this hall you are seated in a building which has no equal in this country. It is, so far as human conception can make it, a perfect model of architecture. This building is absolutely a reproduction of the old Temple of Diana. No State in the Union has such a building. Go to our Centennial and you will find there the reproduction of another, one of the most perfect buildings in all the history of the world. No other State has it. It is the pride of our city. It should be the pride of our State, and today the ladies are there working to make it one of the greatest art galleries in the United States,

and you, I trust, will be called upon in that great enterprise.

Commercially, Nashville is one of the greatest cities in the South. She is a moral town. I believe I can say without contradiction that there is no city in the United States today with the population of Nashville in which there is a better understanding of the law and a more willing obedience to the law. I can say today for this great community of nearly 150,000 people that there is not a gambling-house in the city, and that all laws are being observed. I can carry you to the top of one of our skyscrapers and show you a panorama the like of which you can see nowhere else. This city to which I welcome you is full of hospitable people. We want you to have a good time, and when you get through with this short program, we want you to spend two or three days or a week in finding out really what Nashville is, and then I know that the population of the city will be increased about just that number.

Gentlemen, I bid you a heartfelt welcome, and wish for you every success in your work, the most important work that you are called upon during the year to perform. I wish you all success in the consummation of your highest ideals. (Applause.)

DR. TIGERT: This organization is made up of a great number of county societies. You are now in the home of one of these organizations, the Nashville Academy of Medicine and the Davidson County Medical Society. We feel that we would like to convey to you an adequate conception of our pleasure at your presence in this city on this occasion, and the Committee of Arrangements has been particularly fortunate in securing the services of one of our most distinguished physicians and gifted orators, whom we feel can express our sentiments even better than we ourselves. I take great pleasure in introducing Dr. John A. Witherspoon, who will address you.

ADDRESS OF WELCOME BY DR. WITHERSPOON.

Mr. Chairman, Fellow Members of the Tennessee State Medical Association: It has been peculiarly my pleasure to be selected for this purpose and to fulfill this mission of welcoming this body to the Capital City

of our State. Having the precedent of many years of having had this function performed by men of national reputation before me, it naturally arouses in my bosom a feeling of pride that the Academy of Medicine of this city should select so humble a servant to bid you welcome to the Capital City, your city as well as ours, at this particular time. I feel, gentlemen, that you are to be congratulated upon the time in which you live, in which you meet and deliberate in medicine. Not one word would I detract from the reputation of the past, nor pluck one laurel from the brow of those medical pioneers who in the past contributed so much to medical lore and made it possible for us to be able to meet, discuss and render such valuable aid the people whom we love as can be done today.

Today, gentlemen, as our Mayor has just said, the medical profession occupies a position far from a private one. We are awakening to a realization of the fact that, after all, we are our brothers' keepers; that if this country is to be protected; that if this country is to be prosperous; that if this country is to blossom like the rose, it will not be because the tariff is high or low; it will not be because of any of the laws on the statute books of this country, but it will be because we have strong, healthy, robust men, women and children in this land. They are, after all, the great resources of any country. The time is at present propitious, and by the arduous labors of such bodies as this we have been able to say to all foreign invasion, to epidemics that have come like withering blights to this land, claiming thousands and thousands of helpless victims, you have come to our borders, thus far you may come, but no farther. This has been accomplished by the most self-sacrificing, by the most arduous labors and efforts of the medical profession, unaided, I am sorry to say, by the assistance of government or State in an adequate manner. Yes, gentlemen, we—and I say we because I feel proud to be one of you—occupy a position in which we feel that we can lock arms with the ministry of God not only in helping the sufferings and alleviating the pains of our fellowmen, but in making it possible in this country that we may have a God-loving and God-fearing people. (Applause.)

I feel, gentlemen, as a profession, that the time has come when coarse jibes and witticisms at the expense of the medical profession have long since lost their power to attract notice. The time has arrived when the people understand that if they are to be protected from this great

scourge, tuberculosis, that, after all, it must come by the proper education of their own powers and by the possibilities placed at their hands by the profession and by tests and reactions and experiments that have cost the lives of thousands of our members. Self-sacrificing physicians! I do not believe there is a man in the medical profession within the sound of my voice today who would not offer his life as a sacrifice if it was for the purpose of protecting the lives and the health of the people among whom he lives. I do not believe there has ever been or ever will be a people or a profession that has done more unselfish work, that has burnt more midnight oil, that has sacrificed more of their time and health for the benefit of the people than the members of the medical profession, and thank God, the time has come when the people realize that, after all, the medical profession stands like a bulwark between them and the threatening dangers that surround them by disease, sickness and death.

For these reasons, I welcome you as a grand body of medical men to our city of which we are proud. I know practically all of you. I have rubbed shoulders with you. I have met many of you at the bedside in consultation over suffering patients. I have seen the absolutely unselfish methods and means by which you approach anything that is for the good of mankind, and as our Mayor has said, no city and no State can feel prouder of a body of men who are the representative members of this grand and old State Association.

Few States in this country can look back on the past and show more grand and glorious lives. So long as the fathers of the Tennessee State Medical Association have such men as the immortal Eve; so long as we have such men as Maury; so long as we have men like the late William T. Briggs, the Maddins, and many others as pioneers who have absolutely stood for the highest and the best in the profession, you naturally should feel great pride in meeting in this city, and we should feel proud to walk in their footsteps. Gentlemen, I bid you a hearty welcome to the Capital City of the State. I bid you welcome on the part of the Nashville Academy of Medicine and the Davidson County Medical Society. Furthermore, we bid you welcome on the part of every man, woman and child in the city of Nashville, who holds out a brotherly love to you because they are your debtors. (Applause.)

DR. TIGERT: We had hoped that Dr. Holtzelaw would be with us this morning to respond to these addresses of welcome, but we are amply repaid in his absence, and are particularly fortunate in being able to have Dr. George R. West, of Chattanooga, respond to these addresses of welcome. I take great pleasure in presenting to you Dr. West. (Applause.)

DR. WEST said:

Mr. President, Ladies, Members of the Tennessee State Medical Association:

Some have greatness thrust upon them. I would not have you confuse me with Dr. Holtzelaw in the least. You all know him as an orator and as a humorist, and if you had been present recently with me at a banquet given by him to about one hundred of his intimates or colleagues, celebrating the twenty-fifth anniversary of his practice of medicine in Chattanooga and could have heard the laudatory remarks there made about him (we call him the Lawson Tait of Chattanooga) you would appreciate what I say when I ask you not to confuse me with Dr. Holtzelaw.

I am very proud to come to the city of Nashville. All of the Hill-Billies enjoy coming to the center of education occasionally. We take the opportunity, whenever we can, of coming here. We are here as your guests and it occurred to me that these hearty words of welcome which you have heard have been expressed each year for so many years that they would be perfunctory; but there was a ring of true steel about the Mayor's talk and the remarks of Dr. Wither- spoon that makes me feel they were sincere. I feel that now I am the guest of some one, and I am sure the members of this Association will feel at home. We hope not to abuse the Mayor's welcome, and if we have to call on the police, it will be in order to assist him in upholding the right.

As I came up the hill and the still dew of heaven was wafting in my face, I was reminded of the law that is coming into vogue pretty soon, and it would be chiefly water we would have around us, and I feel that we doctors more than any other profession or people should strive to carry that law out. Whenever spirits of frummenti have been prescribed by doctors, usually the prescription has been abused, for the reason that people have had it refilled without going back to the doctors. If the doctor is an honest

man—and I believe we are all honest men—he can assist in upholding this new law, and I am sure that you can get no greater support than that which will come from the medical profession is carrying out the law.

Mr. Chairman, I thank these gentlemen in the name of the State Association for these cordial words of welcome. We will try to behave ourselves. We will enjoy your hospitality, and we will always go away thinking and knowing that Nashville is not only the center of the State, but the center of everything good and hospitable. (Applause.)

DR. TIGERT stated, as Chairman of the Committee of Arrangements, that the House of Delegates would meet from 8 to 9 a. m., and from 2 to 3 p. m., daily, until all business was finished.

As Chairman, he said that he had endeavored to make everything as comfortable and as satisfactory as possible. He then asked the President, Dr. Bosworth, to take the chair.

DR. BOSWORTH said:

Ladies and gentlemen: It is my proud privilege to declare the seventy-sixth annual meeting of the Tennessee State Medical Association now open for the fulfillment of its official program.

Dr. Walter Dotson, of Gallatin, read a paper entitled "Squint and Its Treatment," which was discussed by Dr. Savage, and in closing by the essayist.

Dr. R. M. McCown, of Knoxville, read a paper entitled "Surgery of the Thyroid Gland," which was discussed by Drs. Haggard, Malone, Burch, Fort, and in closing by the essayist.

On motion of Dr. Crook, the Association adjourned until 3 p. m.

First Day—Afternoon Session.

The Association reassembled at 3 p. m., and was called to order by the President.

Dr. G. C. Savage stated that recently Dr. T. J. Happel had been operated on for brain tumor, and was at present at his home, and while he was still conscious, he was very ill. He therefore moved that

the Association send Dr. Happel a telegram of sympathy in his affliction. Seconded.

Dr. Jere L. Crook stated that he had received a telephone message the day before he left for the meeting from Dr. Happel's son, who stated that Dr. Happel had shown practically no improvement since the operation, and that while he could not speak, he was conscious of what was said. He was sure he would be able to comprehend the meaning of the telegram which would be sent to him by Dr. Savage or the Secretary. Carried.

Dr. Savage moved that hereafter, when the House of Delegates fails to adjourn at the time for the convening of the general meeting, one of the Vice Presidents shall preside over the general meetings in the absence of the President. Seconded and carried.

Dr. George R. West, of Chattanooga, read a paper on "Cancer of the Breast." This paper was discussed by Drs. McNabb, Witherspoon and Litterer.

Dr. J. P. Bates, of Nashville, followed with a paper entitled "Amebic Dysentery and Appendicostomy," which was discussed by Drs. Caldwell, Turek, Cooke, Barr, Witherspoon, and the discussion closed by Dr. Bates.

Dr. G. E. Vaughan, of Clarksville, read a paper on "Membranous Croup, With Report of Cases." Discussed by Drs. Hopper, McCabe, Hardison, Witherington, Runyon, Rawles, Robertson, McNabb, Sullivan, Dotson, Dulaney, Moody, Litterer, and in closing by the author of the paper.

On motion, the Association adjourned until 8 p. m.

First Day—Evening Session.

The Association reassembled at 8 p. m., and was called to order by the First Vice President, Dr. C. P. Carroll.

The President delivered his address. He

selected for his subject "Hippocrates—Past, Present and Future."

Dr. Fenton B. Turck, of Chicago, presented a paper, by invitation, entitled "Researches in Intestinal Infection," which was illustrated with stereopticon slides.

On motion of Dr. S. R. Miller, the Association then adjourned until 9 a. m.

Second Day—Morning Session.

WEDNESDAY, April 14, 1909.

The Association met at 9 a. m., and was called to order by the First Vice President.

Dr. George E. Petty, of Memphis, read a paper entitled "Physiologic Laws Governing the Action of Purgatives; An Original Study."

Dr. J. R. McFall, of Cumberland City, read a paper on "Leukemia, with Report of a Case." This paper was discussed by Drs. Malone, Lawrence, Litterer, Carter, and in closing by the essayist.

Dr. J. Hugh Carter, of Memphis, followed with a paper entitled "Some Interesting Cases of Appendicitis."

Dr. J. W. Brandau, of Clarksville, read a paper entitled "Intestinal Obstruction, with a Plea for Early Operation Instead of Protracted Treatment with Purgatives." Discussed by Drs. Gaines, Burch, Crook and McNabb.

Dr. William Litterer, of Nashville, contributed a paper entitled "Comparison of the Various Tuberculin Tests in the Early Diagnosis of Tuberculosis."

Dr. Newton Evans, of Nashville, read a paper on "Microscopic Findings in a Case of Coccidioidal Granuloma of the Meninges."

On motion, the Association adjourned until 2 p. m.

Second Day—Afternoon Session.

The Association reassembled at 2 p. m., and was called to order by the President.

Dr. L. B. Graddy, of Nashville, read a paper entitled "The Extraction of the Opaque and Partially Opaque Lens in the Capsule." This paper was discussed by Drs. Savage, Vaughan, and in closing by the essayist.

Dr. J. M. Troutt, of Jackson, read a paper on "Intubation and Antitoxination in the Worst Forms of Laryngeal Diphtheria." Discussed by Drs. Vaughan, Turck, Marable, Crook, Dulaney, McNabb, and in closing by the author.

Dr. Wm. D. Haggard, of Nashville, read a paper entitled "Surgical Types of Abdominal Tuberculosis." Discussed by Drs. Crook, Glenn, Barr, Witherspoon, and in closing by Dr. Haggard.

Dr. Dora Lee Wilder, of Knoxville, read a paper entitled "State Sanatorium in the Prevention and Cure of Tuberculosis." This paper was discussed by Drs. Roberts, Witherspoon, Dulaney, Frierson, Glenn, Crockett, and in closing by Dr. Wilder.

Dr. Roberts moved, in connection with the paper read by Dr. Wilder, that the President appoint three members of the Association to take up this subject and formulate a bill for the establishment of sanatoria in the three grand divisions of the State. Seconded.

Dr. Witherspoon moved to amend that the Association endorse the bill now pending in the Legislature, and that a committee be appointed by this Association to aid in this movement. Seconded.

Dr. Roberts accepted the amendment, and the original motion as amended was carried.

The President appointed on this committee Drs. D. J. Roberts, Chairman, John A. Witherspoon, with power to select a third member.

On motion, the Association adjourned until 8:30 p. m.

Second Day—Evening Session.

The Association reassembled at 8:30 p. m., and was called to order by the Third Vice President, Dr. J. W. Brandau.

Dr. W. S. Lawrence, of Memphis, read a paper entitled "Report of Some Inoperable Tumors Successfully Treated by X-Ray," which was discussed by Drs. Savage, Gaines, Cowden, King, McNabb, and in closing by Dr. Lawrence.

Dr. Taylor called attention to an oversight on the part of the Committee of Arrangements in not inviting Governor Patterson to address the Association. Whereupon Dr. Miller moved the appointment of a committee of two, consisting of Drs. Crook and Cooke, to wait on the Governor and invite him to address the Association at a time to suit his convenience. Carried.

Dr. A. B. Cooke read the report of the Committee on Public Policy and Legislation, as instructed by the House of Delegates. (For this report, see report of the minutes of the House of Delegates, page 24.

Dr. E. R. Zemp, of Knoxville, read a paper entitled "Rational Drug Therapy," which was discussed by Drs. Witt, Robertson, Gaines, Witherspoon, and in closing by the essayist.

Dr. John Overton, of Nashville, read a paper on "Epidemic Cerebro-Spinal Meningitis," which was discussed by Drs. Litterer, McCabe, Witt, Troutt, Jones, and in closing by the essayist.

On motion of Dr. Savage, the Association adjourned until 9 a. m., Thursday.

Third Day—Morning Session.

April 15, 1909.

The Association met at 9 a. m., and was called to order by Vice President Brandau.

Dr. David R. Neil, of Nashville, read a paper entitled "Treatment of Myocardial Insufficiency."

Dr. John A. Gaines, of Nashville, read a paper on "Indications for Surgical Intervention in Peptic Ulcer, with Choice of Operation."

The Secretary announced the action of the House of Delegates in regard to the election of officers for the ensuing year. (See minutes of the House of Delegates.)

On motion of Dr. Crockett, the action of the House of Delegates was concurred in with reference to this report.

Dr. Savage spoke of the wife of Dr. J. B. Murfree as approaching death, and moved that the Secretary be instructed to send a telegram expressing the sympathy of the Association in his present affliction. Seconded and carried.

The President appointed as a committee to conduct the President-elect to the platform Drs. Richards and McNabb.

The retiring President, Dr. Bosworth, in introducing his successor, said:

I present to you a gentleman who needs no introduction to this audience. We have already placed many laurels upon his worthy brow, and I feel that I could not have resigned the Chair to a more able representative, and I am sure he desires to express his feelings on this occasion. Gentlemen, I present to you Dr. Jere L. Crook, of Jackson. (Applause.)

Dr. Crook, in accepting the Presidency, said:

Mr. President and Gentlemen: I am filled with a sense of unworthiness of my ability to fill so exalted a position, and yet I would give you one more reason to add to the others as a cause of my unworthiness. I feel with what little ability I possess I must express to you my sincere and heartfelt appreciation which I owe you for the high compliment you have paid me. The fact that it comes to me in the Capital City of the great State of Tennessee, adds much to the honor, because I have had the proud privilege of graduating from the combined schools, the University of Nashville and the Vanderbilt University, a privilege which is not possessed by any graduate since the divorcement of these two institutions in 1895. I am an alumnus of both schools. The fact that this honor came to me in the home of my Alma Mater

brings new luster to it and adds more to my sense of appreciation.

The fact that this position has been occupied by distinguished men imposes an obligation which I feel deeply, and I assure you, I shall endeavor to do my very best not to bring discredit upon this high office, which I regard as the highest honor in the gift of my profession. (Applause.)

DR. FRIERSON: I would like to make a motion that we extend to our retiring President a standing vote of thanks for his impartial rulings, and for every effort toward the advancement of this Association.

This motion was seconded by several, and was unanimously carried.

The President announced that Governor Patterson would address the Association at 11 :30 a. m.

Dr. Charles P. McNabb, of Knoxville, read a paper entitled "Cancer of the Stomach, Including Sites and Frequency of Cancer of the Alimentary Tract," which was discussed by Drs. Haggard, Gaines, Bryan and Litterer.

Dr. T. J. Coble, of Shelbyville, read a paper entitled "Lung Puncture as a Therapeutic Agent," which was discussed by Dr. McNabb, after which, on motion, the Association adjourned until 2 :30 p. m.

Third Day—Afternoon Session.

The Association reassembled at 2 :30 p. m., and was called to order by the President.

A paper by Dr. E. H. Jones, of Murfreesboro, entitled "Definite Terms in Diseases of the Stomach," was read by title in the absence of the author.

Mr. H. C. Shapard, of Shelbyville, read a paper entitled "A Plea for the U.S.P. and N. F. Preparations," which was discussed by Mr. Neil, Dr. Witt, and in closing by the author of the paper.

Dr. W. D. Sumpter, of Nashville, read a paper on "Congenital Calculus in the Prostatic and Membranous Urethra of a

Seven-Year-Old Boy." This paper was discussed by Drs. Bryan, Barr, and in closing by the essayist.

Dr. N. F. Raines, of Memphis, read a paper on "Smallpox in Shelby County," which was discussed by Drs. McNabb, Litterer, and in closing by the essayist.

Dr. J. T. Moore, of Algood, read a paper entitled "Treatment of Typhoid Fever," which was discussed by Drs. Yarbrough, Bates, George, Crook, Pettet, McNabb, Glenn, and in closing by the author of the paper.

At this juncture Governor Patterson arrived. In introducing the Governor, President Crook said:

I am quite sure I voice the sentiments of the members at this meeting and of those of the State of Tennessee when I say, that this meeting would be incomplete without the presence of our distinguished Governor. He does not need any introduction. I want you to listen for a moment while I read from the official report of our State Medical Association of last year, showing the high esteem in which our Executive is held.

"In presenting to you the final chapter in connection with this legislation, it is nothing short of simple justice to again express on behalf of the Committee the gratitude which the profession should feel for the hearty coöperation of Governor M. R. Patterson in every step of this legislation. He favorably recommended the bill in different messages, made it one of the features of his administration, urged his personal friends to vote for the bill, and finally selected a man of high character to enforce it. All this was rendered possible by the fact that the Governor was in full sympathy with the humanitarian spirit that inspired this Association in first appointing your Committee on that subject, and turned a deaf ear to all the interested detractors of our profession who pretended to see nothing but interested motives behind the whole movement."

I esteem it a great pleasure to introduce to you Malcolm R. Patterson, Governor of the State of Tennessee. (Applause.)

GOVERNOR PATTERSON said:

Mr. President and Gentlemen of the State Medical Association of Tennessee: I desire to

acknowledge with thanks the courtesy and the compliment you pay me in asking me to be present at your meeting, and to add one word to these exercises on behalf of the State of Tennessee.

I am very glad to be with you. I asked one of your members the other day what was the object of the meeting. He said it was to give your patients a chance to recover. (Laughter.) I asked another member, and he said the object of the meeting was to give some respectability to the State Capital. (Laughter.) Which of these is correct I am not able to say.

I wish to congratulate you, gentlemen, upon another thing, and that is, that you are holding your meetings here before the drouth occurs the first of July (Laughter,) and I feel sure after that day the business of the doctor will very materially increase. I am glad to be with you, because I am a member of the legal profession, or rather was a lawyer before I began the life of politics, and it has always seemed to me there is a sort of free masonry between what is called the learned professions, between the doctors and the lawyers, and probably that comes about by reason of the fact that the general public is so free in its criticism of these professions.

I feel that I will be trespassing upon your time to make anything that can be dignified as an address, but a man in my station is usually called upon to make a few remarks at all meetings, and sometimes I think every time a watermelon is cut. (Laughter.)

I wish to acknowledge, as a citizen of the United States, the very great debt which the people of the whole country are under to the profession to which you belong. I wish particularly to acknowledge on behalf of the State of Tennessee and her people the debt of gratitude we are under to the medical profession in this State for its intelligent and disinterested efforts to prevent and cure disease. Some mention has been made of the fact by your worthy President that I had been in favor of the enactment of the pure food law, and so I was, and I am also in favor of every measure which has been advocated by the medical profession of this State looking to the better health of our people. I have been and am in hearty sympathy with your movement to fight that dread disease that has slain more people than all the wars the world has seen, and if in my executive capacity I can do anything to further your philanthropic ends, it shall be most cheerfully done. (Applause.)

Speaking as a member of another profession,

I may say of it and I may say of yours, that what is most needed in both is a higher standard of learning. I am glad that we have made such progress in Tennessee toward the eradication of unworthy members from your profession and from the profession of law. The fact is that the practice of the legal profession is of such honorable distinction and importance to the community and to the State, there is no place for the shyster or dishonorable man, and in the practice of your noble calling, it is all-important to the health of the people for the charlatan and the empiric to be barred from being among you. The health of your people is of the greatest possible importance to the State. Possibly it should be ranked as first in importance, and yet human nature presents this curious contradiction, that if a man's property is involved, he will put up large sums of money and secure the best legal talent he can possibly obtain, whereas if his health is involved, he will dose himself with medicines of no value, having read of them in the newspapers, and therefore risks his health and life in the hands of men who are thoroughly incompetent. Therefore, in the matter of health, it seems to me of the greatest importance that the medical profession should purge itself of unworthy members. While the State owes a debt of gratitude to you, the State ought to be very liberal in its treatment of the physicians, and especially of the health of its people. I am one of those who believe that it is poor economy on the part of a State to be niggardly in the matter of expenditures which affect the public health and public education. (Applause.) I believe that no State is so poor that it cannot afford to treat these subjects with the importance and consideration which they deserve.

I have always thought there must be something extremely fascinating in the medical profession, because there is always the field of discovery and exploration. If we take the practice of law, as we all know, it is founded on precedent. As one great man has said, the English common law comes down from precedent on to precedent. The law is but a mirror of the customs and manners of the people. It follows; it never leads. If we go into the realm of history, it is doubtful whether in perspicacity, accuracy, and simplicity, the commentaries of Cæsar have been excelled by anyone in modern times. If we take the epic of Homer and the lyrics of Horace, they are still the masterpieces of the world. If we go to the orators, those of antiquity have probably

excelled those of modern times. If we go to the sculpture, to the painting and architecture, the moderns have certainly not improved upon the ancients. There is a reason for this, because in painting we have the same sunsets they had years ago. In sculpture there was the same human figure to model and to carve, and to preserve in stone or in marble. And when we talk about the elemental virtues and vices of the mind, they were the same two thousand years ago as they are today. But in science, in the combination of the known and the unknown, in the production of new forms, the field has been illimitable, and I have thought, therefore, that your profession must be one of exceeding interest and one of great inspiration.

I have not time to detain you long. I feel very deeply the compliment you have paid me. I am very glad to be among you and to know you, because you represent not only important interests in this State, but in your personalities as well. I have seen a good deal of physicians in my life. The physician stands at the beginning of life's journey, and very often he is there at its end. I have seen him at the beginning, and I have been with him at the end, and my testimony would be of those I have seen and known in the past, that in addition to bringing to their profession learning, skill, and conscientiousness, the American physician has truly earned that proudest of all titles, "the American gentlemen." It was a great orator who said of that master mind, Shakespeare, "He was an intellectual ocean from which all rivers came, and to which all rivers flow," and I may say of your noble profession that it is one from which the best in life has come, and to which the best in life shall go. Again, I thank you. (Applause.)

Dr. W. A. Bryan, of Nashville, read a paper entitled "Sarcoma of the Osseous System," which was discussed by Drs. Gaines, Beasley, McNabb, and the discussion closed by the essayist.

A paper by Dr. E. C. Ellett, of Memphis, on "Acute Glaucoma from the Viewpoint of Those Other Than Ophthalmologists," was read by title.

Dr. J. M. King, of Nashville, read a paper on "Diagnosis and Treatment of Eczema," which was discussed by Dr. Yarbrough, and in closing by Dr. King.

Dr. Savage said there were twenty-two papers on the program that had not been

read. Accordingly, he moved that the Secretary be requested to procure all of these papers that had not been read, and have them on file for publication during the year, if possible. Seconded and carried.

There being no further business to come before the meeting, on motion, the Association then adjourned to meet in Memphis in 1910.

GEORGE H. PRICE,
Secretary.

MINUTES OF THE HOUSE OF DELEGATES.

First Session.

TUESDAY, April 13, 1909.

The House of Delegates was called to order to 2 p. m., by the President.

The reading of the minutes of the sessions of last year was called for.

The Secretary stated that these minutes were printed in the June issue, 1908, of the Journal of the Tennessee State Medical Association.

Dr. D. J. Roberts moved that the reading of the minutes be dispensed with, inasmuch as they had been read by the members. Seconded and carried.

The next order of business was the report of the Secretary.

Secretary Price presented his annual report, as follows:

SECRETARY'S REPORT.

To the Officers and Members of the Tennessee State Medical Association:

MR. PRESIDENT AND GENTLEMEN—Your Secretary begs to submit the following report for the past year:

There are now enrolled upon the list of County Societies 57 counties, out of 96 in the State. Of the 57 counties, 52 have reported, leaving 5 to be heard from. Of those reporting, we have a total of 1,377, of which 1,059 are reported as paid, there being 318 unpaid, at present, many of whom will pay up.

County organization has been improved in some counties, but there seems to be a great lack of concerted effort in many counties to keep up the local societies. In many of the larger counties the society work is quite active and seemingly productive of good; so also is the case in some of the smaller counties, but in a large proportion of the small counties the organiza-

tions are devoid of any organized effort to maintain a society.

In one of the counties of Middle Tennessee, every eligible man in the county is in the local society. This is Robertson County, under the care of Dr. B. F. Fyke, Secretary. This is a most remarkable record, and deserves special mention, as showing what can be done by an active, enthusiastic County Secretary, who feels interested in the work.

The great need of county organizations is an active man in the office of secretary, for unless such an one is in this important office, but little will be accomplished.

The State Secretary issued a number of calls for county news and reports of work being done in local societies, and urged the importance of these reports, but only a few ever gave any evidence of having read these requests.

During this year the following counties have come into the State Association: DeKalb, Bledsoe, Jackson, Scott, and Unicoi.*

I am more impressed than ever before with the great need of Councilors, whose special duties shall be to keep in touch with county societies in their respective districts, and who shall devote their attention to county organization in counties not affiliating with the State Society.

THE JOURNAL.

In accordance with the action of the House of Delegates, taken April 15, 1908, this Association began the publication of its transactions in journal form to be issued monthly, under the direction of a Committee on Publication.

Soon after the close of the Knoxville meeting the Committee on Publication took up the matter of making a contract for this work, and after much and careful consideration placed this contract with Marshall & Bruce Co., of Nashville, as this concern's bid for the Journal work, as well as the bound volume of the transactions, was the most advantageous, and this concern has

*Since the meeting Overton and Lawrence counties have organized.

done the work. This contract, according to agreement, terminates with the terms of office of your present Committee on Publication, which of course terminates with this meeting, as this committee was appointed for one year from last annual meeting.

The first issue of the JOURNAL made its appearance June, 1908, and received congratulations from the A. M. A. Journal, and a number of State Journals of sister States. The JOURNAL has been issued monthly since that time, and has been in the hands of all members of the Association and County Societies; in addition to this, it has exchanged with quite a number of State and other journals.

Through the JOURNAL we have been able to place many items of interest to the membership before them as these matters came up, rather than reserving them for the annual meeting. The policy of the Committee on Publication was to reach all members, and also to encourage organization in unorganized counties. To this end it caused to be issued 1,600 copies of the June issue, of which issue a large number were sent to the physicians of unorganized counties, and this plan has been followed with each issue, though the issue has been only of 1,500, except for the first two months. We also sent quite a number to responsible and reputable manufacturing concerns, soliciting advertising for the JOURNAL.

Our efforts at arousing interest in unorganized counties has resulted in the addition of organizations in Bledsoe, Jackson, Scott and Unicoi counties. To the list of new county organizations should be added DeKalb, which came in during the last annual meeting at Knoxville. This gives us a total of five new counties.

The launching of a JOURNAL, as a matter of course, was attended by some incidental expense, and then, too, the printing of the extra sheets for the bound volume of Transactions for the year has been an additional expense, which can be dispensed with in the future.

The actual expense of the JOURNAL is here-with given:

| | |
|---|------------|
| Printing, binding, paper, postage and mailing | \$1,146 88 |
| Additional salary of Secretary over last year | 200 00 |
| Total..... | \$1,346 88 |
| From this amount should be deducted the contracts for advertisements which have been and are at present printed in the JOURNAL..... | 433 75 |
| Balance..... | \$913 13 |

This would make the actual cost of JOURNAL to each subscriber about 73 cents per annum. Though some of these ads are to be carried for some time before maturing, these figures go to show what can be done when the JOURNAL is fully established as the organ of the State Association. The character of ads taken was always carefully considered, and any which could not meet the requirements of the A. M. A. were not sought, or, when offered, were declined.

One factor which has operated against us in securing ads for the past year is the size of the JOURNAL, which was caused by the agreement to issue also a bound volume at the end of the year, such as had been issued heretofore. This compelled your Committee on Publication to adopt a page of the size of the old transactions, which, of course, reduced the JOURNAL page, so much as to hamper us in securing advertisements. If the JOURNAL alone is issued in the future, and it is made a standard two-column page JOURNAL, I feel sure that we can secure a marked increase in our ads, which will reduce the ultimate cost of the JOURNAL to the minimum. This year's experience should convince us that the JOURNAL will be a success, especially so when improved and enlarged as it should be.

The Transactions, in bound volumes:

| | |
|--|----------|
| (a) Cost of 1,400 sheets, printed as JOURNAL was being printed, and already paid | \$196 09 |
| Binding 1,400 volumes in muslin..... | 245 00 |
| Delivering at postoffice or express office.. | 6 00 |
| | \$447 09 |
| Mailing will cost about..... | 190 00 |
| | \$637 09 |

This represents the total cost of the bound Transactions, which expense can be avoided in the future, as there is no necessity in issuing such a volume, and no wisdom in incurring this expense. From this amount should be deducted the cost of printing, which has been paid each month, as the extra sheets came from the press.

| | |
|-----------------------------|----------|
| Item (a) above, namely..... | \$196 09 |
| | \$441 00 |

This represents the approximate amount still due, as the mailing and binding have not been completed, but will be in a few days.

I feel sure that the JOURNAL will be a most valuable asset to the Association and the profession at large in the State, as it is the organ through which the organized profession can

speak and exert its influence, both locally and generally. It can and will prove the strongest factor in promoting the interests of the profession, in questions relating to public health in its every phase, if the county organizations throughout the State will give it the active support which it deserves and demands.

If the State is divided into Councilor districts and active, energetic men are in charge of this important work of promoting and extending county organization, as should be done, then the JOURNAL can and will be of the greatest possible aid in this important movement.

The change contemplated in the By-Laws will place the JOURNAL in the hands of trustees, and this will be a marked step forward, for the responsibilities and duties of the Secretary-Editor are sufficient to consume all the time he can give to this department.

The past year has been one of the most arduous which has fallen to the lot of your Secretary, and he has made every effort to advance and care for the interests intrusted to him.

In closing this report, permit me to say that I think the launching of the JOURNAL was a great advance forward, and that the only question for the members to solve is, will they give it the support it deserves, by insisting on their County Societies making use of its pages for reporting their progress from time to time? If this is done, then your JOURNAL will be a great success not only financially, but in the upbuilding of the Association as a whole and the members individually. Thanking you, I am

Respectfully,

GEORGE H. PRICE,

Secretary.

On motion of Dr. Geo. R. West, the report was received and filed.

The next order was the consideration of Amendments to the Constitution.

Article VIII, with its sections, was read both in the original and amended form, after which, to bring the matter before the house, Dr. Miller moved that the amendments as offered be adopted. Seconded by Dr. Cooke.

After discussion by Drs. Cooke, Savage, Miller, Roberts, and LaRue, a motion was made by Dr. Cooke that the house adjourn until 5:30 p. m., as the time for the general meeting had arrived. Carried.

Adjourned.

Second Session.

The House of Delegates reassembled at 5:30 p. m., and was called to order by the President.

After further discussion of the amendments to the Constitution by Drs. LaRue, Hardison, Savage, and others, the amendments were voted on and adopted in the following form:

ARTICLE VIII.

SECTION 1. The officers of this Association shall be a President, three Vice Presidents, a Secretary, a Treasurer, three Trustees of the JOURNAL, and ten Councilors, one of whom shall be from each Congressional District of the State.

SEC. 2. All the officers shall be elected annually except the Trustees of the JOURNAL and the Councilors. Three Trustees of the JOURNAL shall be elected at the annual session of 1909, no two of whom shall be from the same grand division of the State. One Trustee shall be elected to serve for one year, one to serve for two years, and one to serve for three years. At each annual session thereafter one Trustee shall be elected to serve for three years.

The term of office of the Councilors shall be two years, except that five of the ten herein provided for shall be elected at the annual session of 1909 to serve for one year only. At each annual session thereafter five Councilors shall be elected to serve for two years.

The President and Secretary shall be members of the Council, *ex-officio*, and any five Councilors shall constitute a quorum.

SEC. 3. All the officers of this Association, except the Treasurer, shall be elected by the House of Delegates on the morning of the last day of the annual session, but no delegate shall be eligible to offices except those of Trustees of the JOURNAL and Councilor, and no person shall be elected to any office who is not in attendance at the annual session. No one shall be eligible for President of this Association who has not been a member in good standing for the five years next preceding the election, nor for Vice President who has not been a member in good standing for the three years next preceding.

On motion, the House of Delegates then adjourned until 8:30 a. m., Wednesday.

Third Session.

April 14, 1909.

The House of Delegates met at 8:30 a. m., and was called to order by the President.

The Secretary read the minutes of the previous sessions, which were approved.

The Secretary read the following amendments to the By-Laws:

Add a new chapter, to be designated as Chapter IX, as follows:

BOARD OF TRUSTEES.

SECTION 1. The Board of Trustees of the Journal, composed of three members of this Association, elected as heretofore, shall select its own chairman, who shall be *ex-officio* Treasurer of this Association. The Trustees shall have entire control of the publication, the policy, and the editorial and financial management of the Journal of the Association. It shall be authorized and empowered to make all contracts necessary for the conduct of the Journal.

The Chairman of this Board, who is also *ex-officio* Treasurer of this Association, shall be the custodian of all the funds derived from the Journal.

The Board of Trustees shall hold semi-annual meetings and such other meetings as the business of the Journal may require, subject to the call of the Chairman. The Board of Trustees shall make all expenditures of the funds of the Association, and render at the annual meeting a full and detailed account of all receipts and disbursements.

SEC. 2. The Board of Trustees shall serve without compensation; however, their actual expenses in attending the meetings of the Board shall be paid out of the funds of the Association.

The following chapters of the By-Laws to be renumbered, the present Chapter IX becoming Chapter X, etc.

Dr. Roberts moved that the following words be added to Section 1, Chapter IX: "That in the event of death or vacancy of any member of the Board of Trustees between the annual sessions of the Association, the Vice President for that division of the State in which the vacancy occurs shall fill the position until the next annual meeting." Seconded.

Dr. Miller moved to further amend that

at the beginning of Section 2 the following be added: "The Board of Trustees shall serve without compensation, except the Chairman, who is *ex-officio* the Treasurer, whose compensation shall be fixed by the House of Delegates."

The amendments were duly seconded and adopted.

Dr. Cooke offered the following amendments to the By-Laws, to lie over until Thursday:

AMENDMENTS TO BY-LAWS.

CHAPTER VI.—DUTIES OF OFFICERS.

To amend Section 3. Relating to duties of Treasurer in line 8, so as to read as follows: "He shall pay money out of the treasury only as provided for in Chapter IX, as defined and set forth in the duties of the Board of Trustees.

To amend Section 4. Relating to duties of the Secretary, which was amended at the last annual meeting, by striking out the words "Committee on Publication or," appearing in the last sentence of this Section.

Also Chapter VIII: Committees. Amend Section 1, by striking out "A Committee on Publication."

Amend this Chapter by striking out Section 4, relating to Committee on Publication, and renumbering Sections 5 and 6, so as to make them Sections 4 and 5, respectively.

The President appointed Drs. Richards, Roberts, and Woodyard as an auditing committee to audit the accounts of the Secretary and Treasurer.

The Secretary read a communication from the Assistant Secretary of the American Medical Association relative to a relief fund for the family of the late Dr. James Carroll, and soliciting contributions.

After remarks by Drs. Cooke and McCampbell, Dr. Cooke moved that the Association contribute \$50.00 toward this relief fund. Seconded.

Dr. McCampbell moved to amend that the amount be made \$100.

The original motion, as amended, was seconded, accepted, and adopted.

Dr. A. B. Cooke then read the report of the Committee on Public Policy and Legislation, as follows:

REPORT OF COMMITTEE ON PUBLIC POLICY
AND LEGISLATION.

To the House of Delegates of the Tennessee State Medical Association:

GENTLEMEN—Your Committee on Public Policy and Legislation begs to submit the following report:

There was nothing to engage our special attention until the convening of the General Assembly on January 4th last. At the call of the chairman a number of meetings were held by the committee during the preceding months for the purpose of discussing the situation and perfecting plans of action. It is a pleasure to report that all our calls were heartily responded to, and that the coöperation of the individual members of the committee has at all times been as active as the exigencies of professional duties would permit.

As is well known to all, the present session of the Legislature has not been a favorable one for the consideration of miscellaneous business. In fact, until certain measures which were introduced early in the session had been finally disposed of, it proved utterly impossible to secure the attention of the Senators and Representatives upon other subjects. And then when it seemed that the auspicious time had arrived, a quorum was broken in the Senate for some ten days, during which the machinery of legislation was at a standstill. Reassembling of a Senate quorum was followed in two days by adjournment for the recess, which will terminate on Monday, April 19th.

While a number of measures of great interest and importance to our profession have been introduced, and are still pending, only one item of result accomplished can be announced at this time. Early in the session a bill made its appearance both in the Senate and House, seeking to amend and modify the Pure Food and Drug Law in such a way as to practically emasculate it. Without entering into details, it may be said that this bill bore the earmarks of the original opposition to the passage of the law, and soon developed that it was drawn and was being supported solely by a limited number of our local druggists. Your committee appeared before the reference committees of the House and Senate in opposition to the bill, both of which unanimously recommended it for rejection, thus insuring its defeat. Your committee would further

remark in this connection that the Pure Food and Drug Law has proved to be one of the most important and beneficent laws ever placed upon the statute books of our State, and the medical profession, whose child it is, should maintain its interest and watchfulness with reference to it. The only thing necessary to promote its full measure of usefulness is an increased appropriation. A bill looking to this end is now pending, and it is hoped that the members of this Association will lend their influence toward securing its passage.

The measure of greatest and most immediate concern to our profession is the new Medical Practice Act, a copy of which has been mailed to every County Society in the State, and which is published in full in the April number of the JOURNAL. When this bill was introduced your committee, in pursuance of the instructions received at the Knoxville meeting, appeared before the reference committee of the House of Representatives and offered an amendment providing that the members of the Board of Examiners shall be appointed from a list of men nominated by the several State Medical Societies. This amendment was accepted by the representative of the Board present, and as thus amended the bill was unanimously recommended for passage. Its consideration was not reached by the Senate committee (Judiciary); but we are assured that it will be taken up after the recess. In the judgment of your committee the enactment of this law, as amended, would do more to elevate the standards and safeguard the interests of the medical profession in Tennessee than all previous laws on the subject combined, and we earnestly urge you to rally to its support. There is yet time before the recess is over for the individual members of the Legislature to be interviewed upon the subject by their home physicians, or, if this is impossible, for personal letters and telegrams endorsing the bill to be sent, and the more of these the better. A few letters have been received by members of the Legislature in opposition to the bill, and, few though such letters should be in the aggregate, they will certainly have their effect unless contradicted by many endorsements. The opposition to this bill must be small indeed. Let us overwhelm it by the strength of our endorsement and a display of personal interest and activity which cannot fail to be understood.

The present status of the Uniform Vital Statistics Bill is as follows: After being unanimously recommended for passage by the Committee on Sanitation of the House, it came up on

final reading, but under the misapprehension that it carried an appropriation, was re-referred to the Committee on Finance and Ways and Means. It was again recommended for passage by the latter committee, but its final disposition was not reached before the adjournment for recess. In the Senate its consideration was never reached by the reference committee. This is a most important measure, important alike to the profession and the people of our State, and your committee begs that it be not allowed to die for lack of support. It is a sad reflection upon any commonwealth that it pays more attention to the various interests of its domestic animals than to those of its people. If this bill becomes a law at the present session of the Legislature, Tennessee will lead all Southern States in a most commendable step of progress and enlightenment. When advocating the passage of the Medical Practice Act, do not forget to say or write an earnest word in favor of the Uniform Vital Statistics Bill.

Your committee was instructed at the Knoxville meeting to take the proper steps to have the law creating the State Board of Health so amended as to provide that in future the members of the board shall be appointed from nominations made by this Association. A bill embodying this provision was drawn and has been in hand since early in the legislative session; but no propitious time for its introduction has so far presented itself. After careful consideration it is the opinion of your committee that, in view of all the conditions, it would probably be unwise to urge this measure at the present session of the Legislature. This Board, we take pleasure in stating, is on record as favoring such a change in the law, but in the interest of other measures already pending, we believe it would be safest to defer action at this time.

Instructions were also received at the Knoxville meeting looking to so amending the law governing County Boards of Health as to provide that in future their members shall be appointed from nominations made by the several County Medical Societies. This would undoubtedly be a wise measure. But upon studying the situation, your committee concluded that it would be impolitic to urge it at the present session of the Legislature. A bill has been drawn covering the changes desired, and if conditions should prove favorable after the recess it can be introduced by our successors. •

The only other subject to which your attention will be called is that of needed legislation for the establishment of one or more State Sanatoria for

Tuberculosis. Your committee has not been active in this direction for the reason that it was given to understand that bills had been prepared and would be introduced from other sources. Such bills have not yet materialized; but the sentiment and the needs of the State are so pronounced upon the subject that we are led to believe that proper action will be taken before the final adjournment of the Legislature.

To summarize, your committee would recommend that this Association frame a suitable petition to the General Assembly setting forth the importance of the legislation herein referred to and bespeaking its favorable consideration. In addition we would strongly urge that each individual member make it his business to seek a personal interview with his Senator and Representatives upon the subject, or, if for any reason this is impossible, write or wire them. The members of the Tennessee Legislature are honest men who, above all things desire that their official actions may merit and receive the approval of their home constituents. To this end they will welcome all suggestions from those whom they represent and with rare exceptions will respond to any reasonable appeal. The thing most needed at the present crisis is prompt and concerted action on the part of the profession. If we want these important measures to become laws, we must take the trouble to manifest an interest in them. And the time to do so is *now*. After the Legislature reconvenes next Monday the pressure of business will be great, and a satisfactory hearing is difficult to obtain.

In conclusion, your committee begs to express its conviction that the time has fully come when the great medical profession of Tennessee can and should make its influence felt with respect to all legislation affecting its own and the people's interests. The work already done along this line has borne rich fruit. And whether or not all is obtained at the present session that is desired, we feel that the legislative pathway in the future will be less rugged and thorny for our successors upon this committee.

A. B. COOKE, Chairman;
GEO. H. PRICE, *Ex-Officio*;
W. D. HAGGARD.
B. D. BOSWORTH, *Ex-Officio*;
S. S. CROCKETT.

The Secretary moved that the report be accepted, filed for publication, and that Dr. Cooke be requested to read the same before the general meeting of the Association. Seconded.

Dr. Witt moved to amend that the house not only endorse every word of the report, but its recommendations.

The amendment was seconded, accepted, and the original motion, as amended, was carried.

Dr. Cooke then offered the following, which was adopted:

To the Members of the Fifty-Sixth General Assembly:

GENTLEMEN—The Tennessee State Medical Association, in regular meeting assembled, respectfully petitions you to pass the Medical Practice Act now pending before your honorable body, with the amendment to Section 111 adopted by the House Committee on Sanitation, providing that the members of the Board of Medical Examiners shall be appointed from a list of nominations submitted by the several State Medical Societies. It is the unanimous opinion of the members of this Association, more than twelve hundred in number, as represented by this House of Delegates, that the enactment of this law would not only elevate the standards of the medical profession in our State so as to place it upon an equal footing with that of other States, but would also do much to promote and safeguard the interests of the people.

We would also earnestly request that you pass the Uniform Vital Statistics Bill, which is also pending, both in the House and Senate. For many reasons, medical, legal, and social, this is one of the most important measures which can engage the attention of any legislature. It is a sad reflection upon a State that it should exercise greater care for its domestic animals than for its human population. By passing this bill at the present session you would place Tennessee in the first place among Southern States upon this important question.

We would further request that you earnestly consider the propriety of increasing the present inadequate appropriation for the enforcement of the Pure Food and Drugs Law. No more important law was ever placed upon the statute books of Tennessee, and none for which she received more favorable notice from sister States. Already large results have followed its administration, and with a more generous appropriation there can be no question but that the benefits would be multiplied many fold.

TENNESSEE STATE MEDICAL ASSOCIATION.

....., *President*.

....., *Secretary*.

Date,, 1909.

The Secretary read the call for the next Pharmacopœial convention.

Dr. Roberts moved that a representative be elected to represent the Association at this convention when the House of Delegates proceeds to elect officers. Seconded and carried.

The Secretary moved that Dr. Ellett or Dr. West be given the opportunity to make some remarks with regard to the Southern Medical Association, its organization, and what it is doing, before the general Association. Seconded and carried.

The Secretary read a letter from the Assistant Secretary of the American Medical Association in reference to appointing delegates from this Association to the House of Delegates of the A. M. A., stating that no one could serve as a delegate who has not been a member of the American Medical Association for at least two years.

On motion of Dr. Cooke this communication was referred to the Committee on Nominations.

Dr. Cooke moved that the Committee on Nominations consider the question of certifying eight names from the Association, from whom the Governor shall select four (of the regular profession) to serve on the Board of Examiners, provided the bill now pending becomes a law. Seconded and carried.

The Secretary announced the Nominating Committee, as follows:

West Tennessee—A. T. Clopton, J. D. Brewer, and J. W. Sanford.

Middle Tennessee—S. T. Hardison, B. F. Reagor, and F. J. Runyon.

East Tennessee—T. C. Carroll, H. H. McCampbell, and S. W. Woodyard.

On motion of Dr. Miller, the House adjourned until 2 p. m.

Fourth Session.

The House of Delegates reassembled at 2 p. m., and was called to order by the President.

The Secretary read a communication from the Board of Public Instruction of the American Medical Association with reference to educating the laity in regard to medical matters by popular lectures throughout the State.

Dr. Woodyard moved that the communication be received and filed. Seconded.

Dr. Witt moved to amend that the incoming President be instructed to take such steps as are recommended in this communication, without any expenditure of money, and report at the next annual meeting of the Association.

The amendment was seconded, accepted, and the original motion as amended was carried.

The Secretary read the resignation of the Sullivan County Medical Society, and on motion of Dr. Miller the resignation was accepted, and the Secretary of the State Association requested to ask the Secretary of the Sullivan County Medical Society for its charter.

Dr. Malone presented the following resolution, and moved its adoption:

Resolved, That the delegates of the Tennessee State Medical Association to the annual meeting of the American Medical Association to be held at Atlantic City in June next, are hereby instructed to vote, for, and to use their earnest efforts to secure the election of some one else to the position of Secretary of the American Medical Association and Editor of the Journal of the American Medical Association, in lieu of the present incumbent.

The resolution was seconded by Dr. Roberts, and after being discussed by Drs. Roberts, McGannon and Cooke, Dr. Cooke moved that the resolution go to the table. Seconded.

The President put the vote to table the resolution, with the result that there

were nineteen in favor of tabling it, and eight opposed. Accordingly, the resolution was tabled.

Dr. G. W. Moody presented his report as Chairman of the Committee on Necrology.

REPORT OF COMMITTEE ON MEMOIRS.

Your Committee on Memoirs report the following deaths among our membership during the year, with date of death:

Dr. J. R. Dunn, of Turnersville, April 20, 1908.

Dr. R. B. Rupe, of Weakly, Giles County, June, 1908.

Dr. S. J. House, Franklin, November 15, 1908.

Dr. I. M. Tittsworth, Jefferson City, December 20, 1908.

Dr. A. C. Hoss, Jonesboro, December 22, 1908.

Dr. J. S. Nowlin, Shelbyville, December 29, 1908.

Dr. J. H. Hannah, Covington, January, 1909.

Dr. A. D. Scruggs, Sweetwater, April 9, 1909.

We submit herewith biographical sketches of some of the deceased which have been furnished us, with the recommendation that they be published.

We ask the privilege of including others in the report if they should be brought to our notice later.

We call the attention of county secretaries to the by-law which requires them to notify this committee and furnish needed information in regard to deceased members in time for such information to be included in the committee's report. Respectfully submitted,

G. W. Moody, *M. D.*, Chairman.

IN MEMORIAM.

DR. JOHN R. DUNN, TURNERSVILLE.

Dr. John R. Dunn was born in Robertson County, Tennessee, January 22, 1835, and died April 20, 1908, never living but one year out of the county, when he removed to Clarksville, Tenn., to practice medicine. He obtained his literary education in the country schools, after which he studied medicine and graduated from the Medical Department of the University of Nashville, Tenn., March 1, 1855. He commenced the practice of medicine at Turnersville, Tenn., and remained there all the time, except one year he lived in Clarksville, Tenn. His life was noted for simplicity, gentleness, kindness and devotion to his duties; his patients were drawn

to him by his tenderness and care shown both to the rich and poor. He was loyal to his profession and always showed the highest regard for his fellow practitioners; he was modest and unassuming, and always had a pleasant word and smile for everybody. He was a prominent member of the Masonic order and stood high in the Methodist Church, of which he was a member for a long time. His death was a great loss to his neighborhood and the medical profession will miss him for a long time. He was a member of the Robertson County Medical Society.

B. F. FYKE, *Chairman*;
B. B. SORY,
E. S. HAWKINS.

DR. ISAAC M'CLELLAN TITTSWORTH, JEFFERSON CITY.

Graduate, Medical College of Ohio, Cincinnati, 1889. A member of the American Medical Association and ex-President of the Jefferson County Medical Society. Surgeon for Southern Railway Company. Representative in Legislature in 1905. Member of local board in U. S. Pension Examining Surgeons. Died at his home in Jefferson City, Tenn., December 20, 1908, of cholelithiasis, age 56. In the death of Dr. Tittsworth, the local and State organizations have lost a most earnest and valuable member.

DR. S. J. HOUSE, FRANKLIN.

Samuel John House, M. D., was born in Franklin, Tennessee, June 8, 1855. He grew up on a farm near the town and secured a thorough academic education in the schools of Franklin.

He began the study of medicine in 1874, under the direction of Dr. James P. Hanner, attended the Medical Department of Vanderbilt University, from which institution he received his degree of M. D., in 1876.

He located at once in his native town, where continued in active practice up to the time of his death. On the night of November 9, 1908, he was returning from a professional visit, tired and worn from a busy day's work, hurrying home to the bedside of his little sick daughter, when crossing the railroad track, all unawares, he was struck by a passing engine, his horse killed, his buggy demolished, and he himself received injuries from the effects of which he died on November 15, 1908.

Dr. House was an exceedingly kind-hearted man, and it was said he could never refuse a call. He did a large and laborious practice, was very diligent and faithful in his work, and won

for himself the love and gratitude of his many patients.

He was a charter member of the Williamson County Medical Society, and was one of its most popular and respected members. He had been honored with its presidency, and was the treasurer at the time of his death. He held the office of County Health Officer of Williamson County for several terms and until he resigned in 1900.

As a citizen Dr. House enjoyed the utmost confidence of his fellowmen. He was a steward of the Methodist Church, and was one of the town aldermen at the time of his death.

On December 18, 1884, he was married to Sallie E. Gooch, daughter of Dr. Nat Gooch, of Nashville, who, with four children of the union, survive him.

K. S. HOWLETT, M. D., *Secretary*.

DR. J. S. NOWLIN, SHELBYVILLE.

At a meeting of Bedford County Medical Society, the undersigned committee was appointed to prepare a memorial of the late Dr. J. S. Nowlin. At a subsequent meeting the following paper was presented and unanimously adopted by the Association:

It is with a feeling of sadness we record the death of Dr. J. S. Nowlin, for many years a citizen of Shelbyville, and an active member of this Association. He was born in Marshall County, Tennessee, April 22, 1839, and died at his home in Shelbyville, December 29, 1908, of fracture of the neck of the femur, received one week and about ten hours before his death. His health had been steadily failing for a year or more.

In his youth he spent a few years as clerk in a store in Shelbyville, to which he sometimes referred with pleasure. In 1857 he entered upon the study of medicine with his brother, Dr. B. W. Nowlin, at Farmington. He graduated in medicine at the University of Nashville in 1859, and immediately afterward commenced the practice of medicine at or near Farmington. During this year he married Miss Hattie Thompson, daughter of Mr. Newcomb Thompson, Sr., of this county.

Dr. Nowlin was married the second time to Mrs. Addie Whitson on April 29, 1891, who survives him.

In 1877 he moved from Farmington to Nashville. He was Professor of Gynecology in the Medical Department of the University of Tennessee from 1878 to 1885.

He made many valuable contributions to medical literature in Medical Associations, and through Medical Journals. He was an earnest advocate and active supporter of Medical Asso-

ciations, did as much as any man toward building up and promoting the interests of Bedford County Medical Society, and was very active in the Middle Tennessee and State Associations.

He was an ex-president of the Middle Tennessee and the County Medical Associations. Dr. Nowlin made considerable reputation as a surgeon as well as a general practitioner. He performed such operations as amputations, herniotomy, tracheotomy, laparotomy, and removal of tumors. As a man Dr. Nowlin was agreeable, courteous and kind; always ready to extend a helping hand to his fellow man, and had a great many friends. He was an elder in the Presbyterian church at the time of his death. He was active in all the departments of the church. was Dr. Nowlin. He was true to his convictions of duty in all the relations of life, and his highest endeavor was to do the will of his Master." He was liberal in his feelings toward other denominations. In this respect his Christianity was broad and embraced all the Christian world. He carried his religion with him every day. One who knew him well wrote of him: "There was no better and truer Christian gentleman than Therefore,

Resolved, That the Bedford County Medical Association has lost a valuable, honored member, the community a good and useful citizen, Christianity an earnest advocate, and his family a devoted loved one.

Resolved, That we deeply sympathize with his family in this, their great loss and sorrow.

That a copy of this paper be spread upon the minutes of this Association, and a copy sent to each member of his family.

G. W. MOODY,
F. B. REAGOR,
T. J. COBLE,
J. E. LACY,
R. J. FISHER,
H. L. NEASE,
M. A. L. ENOCHS.

Dr. McGannon moved that the Secretary be instructed to prepare and have published in pamphlet form two thousand copies of the Constitution and By-Laws for distribution among the members; also that the Principles of Medical Ethics be included in the pamphlet. Seconded and carried.

Dr. Miller moved that the incoming

President appoint a committee of three on revision of the Constitution and By-Laws, that the President notify these three members, as well as the Secretary, immediately after their appointment; and that it shall be the duty of this committee to study the Constitution and By-Laws, and if there is anything in the Constitution that does not conform to the By-Laws, or *vice versa*, it be rectified, and that the committee be instructed to report at the next annual meeting. Seconded and carried.

Dr. Roberts offered the following with regard to Dr. William B. Atkinson, prefacing his remarks by referring to the work Dr. Atkinson had done for the American Medical Association:

Resolved, That the delegates of the Tennessee State Medical Association to the annual meeting of the American Medical Association to be held in Atlantic City in June next, are hereby instructed to vote for, and to use their earnest efforts to secure an honorarium or pension of not less than \$100 per month for the former Secretary of the Association, William Biddle Atkinson, of Pennsylvania, in recognition of his long and faithful services in the interest of the Association.

Seconded by Dr. Cooke, and unanimously adopted.

On motion the House adjourned until 8:30 a. m., Thursday.

Fifth Session:

April 15, 1909.

The House of Delegates met at 8:30 a. m., and was called to order by the President.

The minutes of the previous sessions were read and approved.

The first order was the report of the Nominating Committee, which was read by Dr. McCampbell, Secretary of the committee, as follows:

For President—Dr. Jere L. Crook, Jackson; Dr. J. B. Witherington, Munford, and Dr. J. R. Lewis, Ripley.

The President appointed as tellers Drs. McGannon and Miller.

The result of the ballot was as follows: There were 31 votes cast, of which Dr. Crook received 23, Dr. Witherington 4, and Dr. Lewis 4.

Dr. Crook was declared duly elected President of the Association for the ensuing year.

The following officers were likewise duly elected:

For Vice Presidents—Dr. O. Dulaney, Dyersburg, for West Tennessee; Dr. T. J. Coble, Shelbyville, for Middle Tennessee; Dr. C. H. Davis, Knox County, for East Tennessee.

For Secretary-Editor—Dr. Geo. H. Price, of Davidson County.

Trustees—For the three-year-term, Dr. W. C. Bilbro, of Rutherford County, Chairman and *ex-officio* Treasurer; for the two-year term, Dr. B. D. Bosworth, of Knox County; for the one-year-term, Dr. A. T. Clopton, of Gibson County.

Councilors—First Congressional District, Dr. S. W. Woodyard; Second Congressional District, Dr. S. R. Miller; Third Congressional District, Dr. Geo. R. West; Fourth Congressional District, Dr. L. M. Woodson; Fifth Congressional District, Dr. S. T. Hardison; Sixth Congressional District, Dr. G. C. Savage; Seventh Congressional District, Dr. K. S. Howlett; Eighth Congressional District, Dr. E. K. McNeil; Ninth Congressional District, Dr. G. W. Penn; Tenth Congressional District, Dr. Louis Leroy.

Delegate to A. M. A.—Dr. L. A. Yarborough, Covington (1909 and 1910); Dr. J. D. Brewer, Dyersburg, alternate.

Nominees for Board of Medical Examiners—Dr. C. A. Abernathy, of Giles County; Dr. Jere Crook, of Madison County; Dr. G. B. Gillespie, of Tipton County; Dr. W. G. Frierson, of Bedford County; Dr. T. H. Marable, of Montgomery County; Dr. B. S. Wert, of Hamilton County; Dr. D. E. Shields, of Hamblen County; Dr. McP. Glasgow, of Davidson County.

Delegate to Pharmaceutic Association—W. H. Witt.

Place of meeting 1910 Session—Memphis, Tenn.

F. J. RUNYON, *Chairman*;

H. H. McCAMPBELL, *Secretary*.

The amendments to the By-Laws, offered by Dr. Cooke at a previous session,

were read *seriatim*, and adopted. These amendments concerned Sections 3 and 4 of Chapter VI of the By-Laws; also Sections 1, 4 and 5, Chapter VIII of the By-Laws.

Dr. F. B. Reagor moved that Secretary Price be reimbursed for the money he expended over and above his salary as editor of the JOURNAL for the past year. Seconded and carried.

The Secretary stated that this amount was \$255.

Dr. Richards presented the report of the Auditing Committee, stating that the committee had carefully examined the accounts of the Secretary and Treasurer, and had found them correct.

On motion, the report of the Auditing Committee was adopted.

On motion, a rising vote of thanks was extended to Dr. Price for the efficient and faithful discharge of his duties as Secretary-Editor of the Association from year to year, and especially during the past twelve months.

SECRETARY'S FINANCIAL REPORT.

Cash Received.

1908—

| | |
|---|-----------|
| May 29—From W. C. Bilbro, Treas.. | \$ 150 00 |
| July 28—From W. C. Bilbro, Treas.. | 200 00 |
| Aug. 26—From Dr. Kathrine L. Storm, ¼ ad..... | 11 25 |
| Aug. 29—From W. C. Bilbro, Treas.. | 150 00 |
| Oct. 2—From W. C. Bilbro, Treas.. | 125 00 |
| Nov. 4—From W. C. Bilbro, Treas.. | 100 00 |
| Dec. 3—From W. C. Bilbro, Treas.. | 75 00 |

1909—

| | |
|--|--------|
| Jan. 10—From W. C. Bilbro, Treas.. | 100 00 |
| Jan. 28—From N. O. Polyclinic ad.. | 5 00 |
| Feb. 3—From W. C. Bilbro, Treas.. | 100 00 |
| Mch. 4—From W. C. Bilbro, Treas.. | 225 00 |
| Mch. 24—From Farbenfabriken Elberfeld Co., ¼ ad..... | 15 00 |
| Apr. 3—From W. C. Bilbro, Treas.. | 100 00 |
| Apr. 6—From Theo Tafel Co., ad.. | 20 00 |
| Apr. 9—From Dr. Kathrine L. Storm, ad. | 22 50 |

Total.....\$1,398 75

Cash Disbursed.

| | |
|---|---------|
| May 28—To Gray Printing Co., circular letters (Voucher No. 1)..... | \$ 1 50 |
| June 2—To mailing JOURNALS (V. No. 2) | 3 16 |
| June 8—To postage for office..... | 2 00 |
| June 8—To telephones | 50 |
| July 1—To Marshall & Bruce Co., printing (V. No. 3)..... | 176 06 |
| July 11—To mailing JOURNAL (V. No. 4) | 3 03 |
| July 23—To postage on circular letters to members..... | 9 00 |
| July 28—To postage on discussions. | 1 00 |
| July 31—To postage on circular letters to advertisers..... | 2 00 |
| July 31—To Marshall & Bruce Co., printing JOURNAL (V. No. 5) | 128 72 |
| Aug. 13—To Gray Printing Co., circular letters (V. No. 6) .. | 4 50 |
| Aug. 17—To telegram, 30c; 18th, telegram, 47c; 19th, ans., 25c | 1 02 |
| Aug. 20—Postage for office..... | 1 00 |
| Sept. 1—To Marshall & Bruce Co., printing (including mailing JOURNAL) (V. No. 7) .. | 118 62 |
| Sept. 1—Snell Bros., printing, etc., special letters (V. No. 8) .. | 3 00 |
| Sept. 1—To A. M. A. second-hand Med. Direct'y (V. No. 9) .. | 4 00 |
| Sept. 9—Mailing JOURNALS (V. No. 10) | 2 39 |
| Sept. 11—To postage for office..... | 1 00 |
| Oct. 3—To Marshall & Bruce Co., printing (V. No. 11)..... | 116 62 |
| Oct. 3—To mailing JOURNALS (V. No. 12) | 2 73 |
| Oct. 13—To postage circular letters (V. No. 12a)..... | 10 00 |
| Nov. 2—To Gray Printing Co. (V. No. 13) | 7 25 |
| Nov. 4—To Marshall & Bruce Co., printing (V. No. 14)..... | 125 55 |
| Nov. 4—To mailing JOURNALS (V. No. 15) | 2 30 |
| Nov. 20—To postage and register package charters | 26 |
| Dec. 1—To registering and mailing 5 charters (V. No. 15a) .. | 75 |
| Dec. 3—To Marshall & Bruce Co., printing (V. No. 16)..... | 95 16 |
| Dec. 5—Gray Printing Co., printing (V. No. 17)..... | 3 00 |

| | |
|--|------------|
| Dec. 9—To mailing JOURNALS (V. No. 18) | 2 61 |
| 1909— | |
| Jan. 14—To Marshall & Bruce Co., printing (V. No. 19).... | 108 45 |
| Jan. 16—To mailing JOURNALS (V. No. 20) | 2 53 |
| Jan. 20—To mailing JOURNALS (V. No. 20a) | 03 |
| Feb. 3—To Duke & Beall (V. No. 21) | 80 |
| Feb. 4—To Marshall & Bruce Co., printing (V. No. 22).... | 106 96 |
| Feb. 12—Duke & Beall (V. No. 23) .. | 40 |
| Feb. 24—To postage circular letters members (Ck. No. 20)... | 10 00 |
| Feb. 26—To mailing JOURNALS (V. No. 24a) | 2 47 |
| Mch. 8—To Marshall & Bruce Co., (V. No. 24) | 207 15 |
| Mch. 8—To Gray Printing Co. (V. No. 25) | 11 00 |
| Mch. 12—To postage, letters and blanks to secretaries (Ck. No. 24) | 5 00 |
| Mch. 19—To mailing JOURNALS (V. No. 26) | 2 00 |
| Mch. 22—To mailing JOURNALS (V. No. 27) | 28 |
| Apr. 3—To Gray Printing Co. (V. No. 28) | 2 00 |
| Apr. 7—To Marshall & Bruce Co., (V. No. 29) | 72 77 |
| Apr. 10—To mailing JOURNALS (V. No. 30) | 2 61 |
| <hr/> | |
| Total received | \$1,398 75 |
| Total disbursed | 1,363 18 |
| <hr/> | |
| Balance..... | \$35 57 |

TREASURER'S REPORT.

To the Officers and Members of the Tennessee State Medical Association:

Cash in hands of Treasurer May 20.

1908\$ 3,041 30

1908.

N. H. Reeves, Bristol, Sullivan\$ 24 00

S. S. Crockett, returned expense account 13 00 |

J. W. Price, Memphis, Shelby 20 00 |

H. M. Tigert, Nashville, Davidson 18 00 |

G. E. Vaughn, Clarksville, Montgomery 2 00 |

| | | | |
|---|-------|--|-------------|
| J. L. Edwards, Brownsville, Haywood. | 4 00 | J. C. Morrison, Clarksville, Montgomery | 2 00 |
| S. T. Hardison, Lewisburg, Marshall.. | 2 00 | W. C. McKee, Trenton, Gibson | 50 00 |
| J. W. McBride, Covington, Tipton | 14 00 | J. W. Price, Memphis, Shelby | 180 00 |
| A. O. Meredith, Pikeville, Bledsoe | 12 00 | C. H. Johnston, Lexington, Henderson. | 30 00 |
| J. W. Price, Memphis, Shelby | 6 00 | C. N. Crook, Rossville, Fayette | 14 00 |
| M. M. Cook, Santa Fe, Maury | 4 00 | J. M. Cullum, Fayetteville, Lincoln... | 34 00 |
| H. P. Larrimore, Chattanooga, Hamil- | | A. O. Meredith, Pikeville, Bledsoe | 10 00 |
| ton | 20 00 | B. F. Reagor, Shelbyville, Bedford..... | 4 00 |
| 1909. | | C. F. Speck, Cleveland, Bradley | 40 00 |
| A. W. Lewis, Copperhill, Polk | 12 00 | E. K. McNeil, Jackson, Madison | 68 00 |
| W. N. Lackey, Gallatin, Sumner | 14 00 | F. A. McClintock, Newcomb, Campbell. | 2 00 |
| H. P. Larrimore, Chattanooga, Ham- | | James F. Darnell, Obion, Obion | 30 00 |
| ilton | 58 00 | Walter Dotson, Gallatin, Sumner | 2 00 |
| A. W. Lewis, Copperhill, Polk | 2 00 | F. L. Smith, Morristown, Hamblen ... | 32 00 |
| H. P. Larrimore, Chattanooga, Ham- | | M. M. Cook, Santa Fe, Maury | 4 00 |
| ilton | 30 00 | George T. Brinkley, Whiteville, Fay- | |
| J. W. Price, Memphis, Shelby | 40 00 | ette | 2 00 |
| R. W. Tate, Bolivar, Hardeman | 20 00 | J. W. Price, Memphis, Shelby | 4 00 |
| W. D. Miller, Ripley, Lauderdale | 32 00 | J. W. McBride, Covington, Tipton | 50 00 |
| B. F. Fyke, Springfield, Robertson | 38 00 | Rufus Pitts, Murfreesboro, Rutherford | 28 00 |
| J. W. Price, Memphis, Shelby | 4 00 | W. B. Parker, Smithville, DeKalb | 6 00 |
| A. W. Lewis, Copperhill, Polk | 2 00 | J. W. Cox, Johnson City, Washington.. | 2 00 |
| John S. Beasley, Centerville, Hick- | | | |
| man | 12 00 | PAID AT MEETING APRIL 13, 1909. | |
| B. F. Fyke, Springfield, Robertson | 4 00 | J. C. Morrison, Clarksville, Montgomery.\$ | 2 00 |
| B. F. Fyke, Springfield, Robertson | 8 00 | B. F. Reagor, Shelbyville, Bedford ... | 6 00 |
| W. D. Larrimore, Chattanooga, Ham- | | O. Dulaney, Dyersburg, Dyer | 32 00 |
| ilton | 64 00 | S. H. Hodge, Knoxville, Knox | 138 00 |
| J. L. Edwards, Brownsville, Haywood. | 20 00 | John Clear, Clinton, Anderson | 32 00 |
| S. E. McDonald, Belles, Crockett | 30 00 | J. D. Alexander, Tiptonville, Lake | 20 00 |
| A. F. Richards, Sparta, White | 32 00 | W. B. Parker, Smithville, DeKalb.... | 4 00 |
| L. D. J. Ensor, Cookeville, Putnam | 24 00 | S. T. Hardison, Lewisburg, Marshall.. | 30 00 |
| F. M. Boyatt, Oneida, Scott | 2 00 | C. L. Hackworth, South Pittsburg, | |
| T. J. Hickman, Lenoir City, Loudon .. | 16 00 | Marion | 2 00 |
| T. O. Burger, McMinnville, Warren ... | 32 00 | K. S. Howlett, Franklin, Williamson.. | 26 00 |
| F. J. Cooley, Waverly, Humphreys ... | 20 00 | C. N. Crook, Rossville, Fayette | 4 00 |
| E. W. Mallory, Gainesboro, Jackson .. | 12 00 | | |
| M. A. Blanton, Union City, Obion | 6 00 | Total | \$ 4,928 30 |
| S. W. Woodyard, Greenville, Green ... | 38 00 | | |
| J. C. Morris, Clarksville, Montgomery. | 28 00 | AMOUNT DISBURSED SINCE LAST MEETING. | |
| M. M. Cook, Santa Fe, Maury | 42 00 | 1908. | |
| F. B. Reagor, Shelbyville, Bedford ... | 28 00 | May 25, S. S. Crockett, expenses to A. | |
| W. S. Scott, Dickson, Dickson | 12 00 | M. A. | \$ 50 00 |
| B. F. Fyke, Springfield, Robertson | 2 00 | May 25, S. W. Woodward, expenses to | |
| G. D. Butler, Pulaski, Giles | 52 00 | A. M. A. | 50 00 |
| J. L. Edwards, Brownsville, Haywood. | 6 00 | May 29, G. H. Price, expenses | 150 00 |
| F. A. McClintock, Newcomb, Campbell. | 20 00 | July 27, Wm. Whitford, reporting | 151 40 |
| I. W. Perkins, Henderson, Chester ... | 8 00 | July 27, G. H. Price, expenses | 200 00 |
| J. M. Cox, Johnson City, Washington.. | 22 00 | August 28, G. H. Price, expenses | 150 00 |
| R. J. Ingle, Sevierville, Sevier | 14 00 | October 2, G. H. Price, expenses | 125 00 |
| G. C. Bryant, McLemoresville, Carroll. | 6 00 | November 2, G. H. Price, expenses | 100 00 |
| R. W. Tate, Bolivar, Hardeman | 2 00 | December 1, G. H. Price, expenses | 75 00 |
| G. C. G. Givan, Harriman, Roane | 30 00 | December 12, G. H. Price, salary | 300 00 |
| J. H. McSwain, Paris Henry | 12 00 | | |
| B. F. Fyke, Springfield, Robertson | 2 00 | | |

1909.

| | |
|--|-----------|
| January 8 G. H. Price, expenses | \$ 100 00 |
| February 1, G. H. Price, expenses | 100 00 |
| February 15, A. B. Cooke, expenses to Washington | 72 00 |
| March 3, G. H. Price, expenses | 225 00 |
| April 2, G. H. Price, salary | 200 00 |
| April 2, G. H. Price, expenses | 100 00 |
| April 12, stamps and stationery account Treasurer | 15 00 |
| April 1, Premium for treasury bond, \$2,5000 | 25 00 |
| April 12, Treasurer's salary | 100 00 |
| April 14, 1908, protested check | 2 50 |

Total\$ 2,290 90

Total received\$ 4,928 30

Total disbursed 2,290 90

Balance on hand\$ 2,637 40

We, your auditing committee, have carefully examined the reports of the Secretary and Treasurer and find same correct.

A. F. RICHARDS,
DEERING J. ROBERTS,
S. W. WOODYARD,

Committee.

REPORT OF COMMITTEE ON TUBERCULOSIS.

To the Tennessee State Medical Association:

GENTLEMEN—Your committee appointed at the last meeting to advance the educational campaign against tuberculosis in the State, beg leave to report as follows:

First—That we have worked each in his grand division of the State, respectively, and have been successful in creating much interest among the people respecting the cause, prevention and treatment of tuberculosis. We have worked with the medical societies, women's clubs, and other organizations; through the churches and schools; and using the press as occasion offered, to disseminate information as widely as possible.

We have had many invitations during the year to address public meetings, and whenever possible have accepted these invitations. It has often happened that invitations have been given for addresses on the subject by the churches. These have generally been accepted and we have been able to supply speakers from the medical ranks. Sunday, November 30, 1908, addresses were made from the various pulpits of

Jackson, Tenn., by Drs. J. T. Barber, E. K. McNeil, J. A. Blackmon, J. L. Crook, and others.

Dr. Crook, in the early part of December, 1908, addressed a large mass meeting by invitation of the Women's Club at Boliver, Tenn. Other addresses by Dr. Crook were made at the Jackson High School, Union Seminary, and a large manufacturing establishment.

Dr. Litterer has greatly advanced the campaign in Nashville and the middle portion of the State.

Dr. Coile has been actively at work in East Tennessee. He has lectured many times to the more advanced classes in the schools; to the Mothers' Association, the Ministers' Union, the general conference of women of the M. E. Church, South; public meetings called in Knoxville to the Jefferson County Medical Society.

He has accepted invitations given by the ladies' clubs, and addressed popular meetings at Johnson City and Maryville, Tenn. Both these meetings were well attended. At Maryville, the meeting was largely attended. The audience was estimated at 700.

In Knoxville, Dr. Coile addressed two large gatherings of negroes, and aroused much interest among them. They have since effected an organization, and have gone to work right.

Under the leadership of Dr. Coile, and assisted by your President and the medical profession of the city, the Knoxville Association for the Prevention and Relief of Tuberculosis was organized. This association is affiliated with the National Association. Its membership is now 385. The association has arranged to secure the American Exhibition in the latter part of June, at a time when there will be a large gathering of teachers in Knoxville from all over the South.

Your committee has shown the public, in so far as it was in their power, the necessity of sanatoria for the treatment of curable cases, and hospital accommodation for those in the advanced stages. Practical results will spring from this. It is time that every city in the State should establish its sanitarium for tuberculous cases. These should be outside of the city proper, with some acreage, and an abundant supply of fine running water.

Without prolonging our report unduly, we cannot detail all our work. We are surprised at what has been accomplished in so short a time, but the work is only begun.

In conclusion, we beg to say that what has been accomplished has been without incurring

any expense whatever to the Tennessee State Medical Association.

We are under obligations to all physicians and others who have responded to invitations to deliver addresses. The press has rendered valuable assistance, and by its continued assistance we can accomplish our desire for the establishment of consumptive hospitals and sanatoria.

Our thanks are due to the ladies for the part they are taking in this great cause.

H. P. COILE, M. D., *Chairman*.

KNOXVILLE, TENN., April 10, 1909.

Dr. Miller presented the following resolution:

Resolved, That the Trustees of the Tennessee State Medical Association be and are hereby di-

rected to expend or contract to expend no funds other than the present balance and the funds that may be received for the current year, and when such funds have been expended, if such should occur, less the necessary expenses of the current annual meeting, the Trustees and all officers and committees are directed to suspend further expenditures until the next annual meeting.

On motion, the resolution was adopted.

There being no further business to come before the meeting, the House of Delegates then adjourned *sine die*.

GEORGE H. PRICE,

Secretary.

MEETING OF THE BOARD OF TRUSTEES, APRIL 15, 1909.

The Board of Trustees met and organized, electing Dr. W. C. Bilbro, Chairman of the Board, since he had been elected by the House of Delegates to the three-year term, as a member of the Board.

This action of the Board of Trustees makes Dr. W. C. Bilbro *ex-officio* Treasurer of the Association, by Constitutional provision. (See action House of Delegates, April 14, 1909.)

MEETING OF COUNCILORS FOR ORGANIZING, APRIL 15, 1909.

The meeting was called to order by Dr. G. C. Savage, as Temporary Chairman, and Dr. E. K. McNeil as Temporary Secretary.

Those present were: Drs. S. W. Woodyard, S. R. Miller, L. M. Woodson, G. C. Savage, K. S. Howlett, and E. K. McNeil. Absent were Drs. S. T. Hardison, Geo. W. Penn, Lonis Leroy, and Geo. R. West.

Dr. Miller moved to make this organization permanent, with Dr. Savage Permanent Chairman, and Dr. McNeil Permanent Secretary. Seconded and carried.

Dr. Savage then explained the Councilor's duty in his own district, and the duty of the Council as a whole.

Dr. Miller made a motion that a Vice Chairman be appointed in each Grand Division of the State, who should confer with others and arrange for meetings

when necessary for any purpose. Seconded and carried. Dr. S. R. Miller was appointed Vice Chairman representing East Tennessee; Dr. S. T. Hardison, representing Middle Tennessee, and Dr. G. W. Penn representing West Tennessee.

The Secretary was instructed to notify absent members of their appointment as Councilors, so that if they did not choose to serve, the President of the Association could appoint some one else for the district.

It was the decision of the Council that the budget for the JOURNAL not only includes money now on hand and what was coming in from dues, but means also the income from advertising during the current year.

E. K. MCNEIL,

Secretary.

Journal, Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. PILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Elighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Pilbro, M.D., Chairman, No. 146 Elighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

By the action of the House of Delegates the JOURNAL has become the recognized organ of this Association, for recording the transactions of this body. From this time on, there will be no separate bound volume of transactions issued to the members, hence it becomes the duty of each individual to preserve the copies of the JOURNAL as they come to his office, which can be bound in book form if it is desired.

This action puts the JOURNAL in the attitude of a book of record of the doings of the Association as a whole and the members as individuals. Your Board of Trustees has, after full consideration, decided to change the form of the JOURNAL, thus bringing it up to the type of the leading State Journals. This undertaking has caused some delay in getting the first issue from the press, as new bids had to be solicited and considered before placing the contract for this important work. It is the intention of the Board and Editor to have the JOURNAL issue from the press about the middle of each month, hence after the delays incident to the first number, it is hoped that there will be but little if any variation from this rule.

It is hoped by those in charge of the JOURNAL that you will, as individuals,

give them that cordial support which they much desire and which they will appreciate most highly, and which is the *sine qua non* of success.

THE COUNCILORS.

One of the wisest acts of the House of Delegates was the election of ten Councilors, one from each Congressional District of the State. The duties of these Councilors will be found in the Transactions of 1907, and from this time on these important officers will have direct and actually active supervision of their respective districts. In order to aid them in the duties imposed, we have had made a map of the State, showing the boundaries of each district and the component counties of same, so that they can enter upon the work of organization and extension of societies in each county. A special letter was sent each Councilor, calling attention to these facts, and they are requested and urged to begin active operations in their respective districts at the earliest opportunity, and report upon the work as soon as possible. In those districts, in which there is not a sufficient number of physicians in any one county to form an independent society, the Councilor for that

district can merge such counties as the conditions may require.

County Organization is to be the keynote of the work before us this year, and each Conncilor is expected to keep this sounding in the ear of the physicians of every county in his district.

We have heard from several, indicating a readiness to enter seriously upon this work, and one has already assisted in the organization of a county society—namely Dr. K. S. Howlett, who was present at the organization of the Lawrence County Medical Society. Let the good work be undertaken and pressed with vigor, to the end that every county shall be in affiliation with the State Association.

THE AMERICAN MEDICAL ASSOCIATION.

THE annual meeting of the American Medical Association begins June 8th and extends through June 11th. The meeting will be held in Atlantic City, the greatest convention city, perhaps, in the country. Ample facilities for caring for all members of the Association with members of their families and friends can and will be furnished by the hotels of this wonderful seaside resort. This meeting will be largely attended by men from every section of the country, but it is feared that the attendance from the south will be materially reduced by reason of the fact that the Southeastern Passenger Association has failed to make a special rate for this meeting. This matter was in the hands of a special committee, whose business it was to secure from each passenger association special rates for this meeting, and we observe from cards and circular letters that a large number of passenger associations made provision for this meeting, but that the Southeastern Passenger Association failed or refused to do so. Why this is the case it is difficult to learn. The only reason we have been able to obtain is that the Southeastern Passenger Association made no rates, but simply stated that their ordinary summer rates would apply. In looking over a circular of information issued by this particular pas-

senger association, we observe that they do give special rates to various organizations, and we know they have granted special rates to political gatherings and also to almost all associations and organizations, educational and church, consequently we cannot understand why the request of the A. M. A. should have been refused. Tennessee has always been well represented at the meetings of the A. M. A., and it is hoped that its representation will not be less this year. The program offered will be divided according to sections, so that every physician can have the opportunity of hearing papers and discussions upon any special subject that he may desire. The work of the association is of such magnitude that it has been separated into twelve distinct sections. A physician can register in any section which he prefers and can take part in discussions of papers presented, provided he is a member of the association. If he does not wish to discuss a paper, he can attend as a visitor in any section. Tennessee is already well represented in the A. M. A., but there are a large number of physicians who are eligible to membership and who have not, as yet, identified themselves with this great American institution. The advantages to be derived from membership in such an organization are many, and we trust that every member of the Tennessee State Medical Association will avail himself of the opportunity to become a member of the A. M. A.

We herewith give the Sections and Officers:

Practice of Medicine—Chairman, Jos. L. Miller; Secretary, Wilder Tileston.

Obstetrics and Diseases of Women—Chairman, W. P. Manton; Secretary, C. Jeff Miller.

Surgery and Anatomy—Chairman, John C. Munro; Secretary, John F. Binnie.

Hygiene and Sanitary Science—Chairman, Jos. H. White; Secretary, S. T. Armstrong.

Ophthalmology—Chairman, Alvin A. Hubbell; Secretary, Albert E. Bulson, Jr.

Diseases of Children—Chairman, Thos. S. Southworth; Secretary, W. W. Butterworth.

Stomatology—Chairman, Edward C. Briggs; Secretary, E. S. Talbot.

Nervous and Mental Diseases—Chairman, M. A. Starr; Secretary, W. A. Jones.

Cutaneous Medicine and Surgery—Chairman, W. A. Pusey; Secretary, M. L. Heidingsfeld.

Laryngology and Otology—Chairman, W. S. Bryant; Secretary, G. E. Shambagh.

Pharmacology and Therapeutics—Chairman, Reid Hunt; Secretary, C. S. N. Hallberg.

Pathology and Physiology—Chairman, M. J. Rosenau; Secretary, H. Gideon Wells.

MEDICAL LEGISLATION.

Our hopes, as to specific legislation along lines involving the codification of existing medical laws in Tennessee, were not realized. The immediate cause of this failure is not quite apparent, although it appears to have been due to lack of concerted action of the profession throughout the State in coming to the assistance of your Committee of Public Policy and Legislation. It was a bit surprising to find representatives from some of the counties where the profession is represented by some of our influential physicians, most antagonistic to the bill as prepared and presented by the State Board of Medical Examiners, and the ground of opposition, when developed, was that the bill would prevent peddlers of patent medicine from doing business in the State. Although this provision, to which these men were so opposed, had been on the statute books of Tennessee for some years, yet they claimed that under the old law the peddlers could do business, while under the proposed law they could not.

The bill was recommended by the Senate and House Committees to which it was referred and passed in the Senate, but it failed to get a hearing in the House, though repeated efforts were made to call it up. We feel sure that if all the county societies had exerted the influence which they could have brought to bear, we would have been more successful. It is to be said to the credit of some county organizations that they gave the committee all the help they could, and this made it possible to pass the bill in the Senate.

Is it not a spectacle to behold, and a

shame to acknowledge, that the laws of a great State should be checked by the men who prey upon the ignorance of the public in matters of such moment?

RECENT DEATHS.

DR. T. J. HAPPEL.

FROM the daily press we note with sadness the death of Dr. T. J. Happel, of Trenton. There was none better known than Dr. Happel; a leading spirit in all things tending to the uplift of the profession and his fellow man. Extended notice will follow action of his County Society.

DR. JOHN M. BOYD.

Dr. John M. Boyd, Knoxville's oldest practicing physician, died Sunday evening, May 16th, at 8:45 o'clock, at his late residence, Church Avenue and State Street. Surrounded by his loved ones, and as the shades of the evening mingled with the shadows of the night, his soul took its flight, making the end of an earthly career which has been one of recognized usefulness to the community in which he had lived almost constantly since his birth, December 23, 1833. He was, therefore, in his seventy-sixth year.

Death was due directly to meningitis, which resulted directly from mastoiditis, with which latter trouble he had been afflicted on a previous occasion, fourteen years since.

Dr. John Mason Boyd was the eldest son of Judge Samuel Becket Boyd and Susan Mason Boyd, who came to Knoxville from Maryland when but children. Dr. Boyd as a youth was educated in the schools of this section, and the University of Tennessee. When he had completed a course at the University of Tennessee, he entered the office of Dr. William Baker. From the tutelage of Dr. Baker, Dr. Boyd went to the Louisville University, and after a term there he went to Philadelphia and took his second term at the University of Pennsylvania, where he graduated March 20, 1856. Dr. Boyd had performed almost every surgical operation known to surgery, and some of them many, many times, and always with a marked degree of success. He was a surgeon in the Confederate Army, serving in Tennessee and North Alabama. Then, following the war, he journeyed to New York and took a special course in medicine and surgery, and later, to further perfect himself in his chosen profession, he journeyed to Europe and studied in France, England and Germany.

Either in the year 1858 or the following year, Dr. Boyd performed an operation which was ex-

ploited over the civilized world. It was the third time that the operation had been attempted and the first time it had been attempted with success or with the recovery of the patient. Since that time, with the increase of skill and science, the operation has become common and is now frequently performed. The operation which Dr. Boyd proved to the surgical world could be successfully performed is known in surgical parlance as supra-vaginal hysterectomy.

When Tennessee decided to locate the Eastern Hospital for Insane at Lyon's View, west of the city of Knoxville, Dr. John M. Boyd was made a member of the building committee to plan the buildings and have them constructed along the most improved and modern lines. He was chosen as a member of the Board of Trustees of this institution, and served in that capacity for many years.

Dr. Boyd helped to organize the Board of Health in Knoxville, in 1866, and was its first President.

Dr. Boyd was a member of the Board of Trustees of the Tennessee Deaf and Dumb School in Knoxville, and served as President of the Board for many years. His knowledge of the sign language and the love for him manifested by the children, made his services almost indispensable. At no place will his loss be felt more keenly than at the Deaf and Dumb School.

Dr. Boyd was for many years a member of the Board of Trustees of the University of Tennessee.

When the Knoxville General Hospital was completed, Dr. Boyd was accorded the honor of appointment as chief of staff physicians who visit the hospital. He held that position, which he filled with becoming grace and dignity, up to the time of his death.

Dr. Boyd was loved and respected wherever known, and when one said this and added that the love and respect were merited, he has briefly told the story of the life of a good man. His life has proven highly useful to his community. The world has been the better for his having lived.



UNDER DIRECT CONTROL OF THE
U. S. GOVERNMENT

BENJAMIN FRANKLIN SAID :

*“Save, young man, and become respectable and respected;
it's the quickest and surest way.”*

Haven't you an ambition? Don't you desire to stand well in your community? Sure you do. *Open an account with us today.* We will add interest to your savings.

The American National Bank of Nashville

| | | |
|--|-----------|----------------|
| Capital, Fully Paid | - - - - - | \$1,000,000 00 |
| Shareholders' Liability | - - - - - | 1,000,000.00 |
| Surplus and Undivided Profits (Earned) | - - - - - | 675,000 00 |
| Security to Depositors | - - - - - | \$2,675,000.00 |



OXFORD RETREAT

OXFORD, OHIO

NERVOUS AND MENTAL DISEASES
ALCOHOL AND DRUG ADDICTIONS

FOR MEN AND WOMEN

96 Acres Lawn and Forest. Buildings Modern and
First-Class in all Appointments.

THE PINES

AN ANNEX FOR NERVOUS WOMEN

Write for Descriptive Circular

G. F. COOK, M. D., Physician in Chief

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., JUNE, 1909

No. 2

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee Shelbyville.

C. H. DAVIS, M.D., East Tennessee Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D. Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan.

GEO. H. PRICE, M.D. Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D. Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D. Covington.

Alternate, J. D. BREWER, M.D. Dyersburg.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman* Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

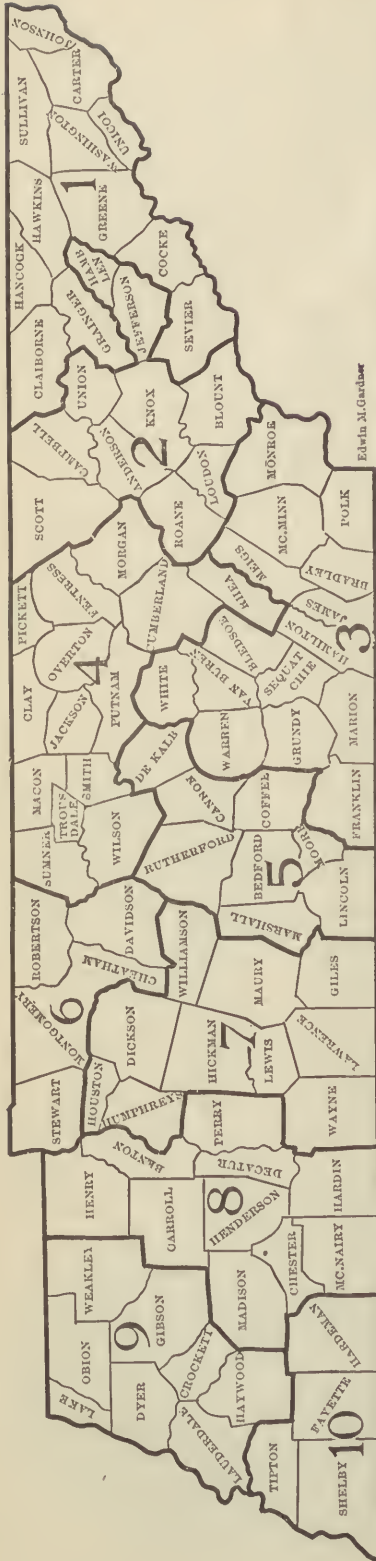
H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greenville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSON COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. McREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Mosheim.
Secretary, S. W. WOODYARD, M.D.....Greeneville.

HAMBLEN COUNTY.

President, W. E. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bollivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. McSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, S. B. FOWLER, M.D.....Gainesboro.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. McNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, ————
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, A. W. LEWIS, M.D.....Copperhill.

PUTNAN COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evansville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. G. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, J. T. CARTER, M.D.....Erwin.
 Secretary, E. B. HOWELL, M.D.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., JUNE, 1909

No. 2

SQUINT AND ITS TREATMENT.

DR. WALTER DOTSON, GALLATIN.

THE greatest cause of squint is an error of refraction. Any error of refraction may produce one of the forms of squint, but to compound hyperopic astigmatism are attributed about 75 per cent of cases of convergent squint, which by the way, furnishes us with about 75 per cent of all cases of squint.

Take, for example, one of the commonest and simplest forms of squint, convergent squint, and on examination we will find some refractive error, which is almost invariably of a hyperopic type; either simple hyperopia, simple hyperopic astigmatism, or compound hyperopic astigmatism.

We account for this through an over-stimulated branch of the third cranial nerve which supplies the ciliary and other muscles of accommodation, as well as the internal recti muscle. To overcome this refractive error, the muscles of accommodation are put on a great strain, and this continued strain of accommodation and overwork of its muscles produce a thickening and shortening of the ciliary muscle, which in turn may produce the same effect on the internal recti muscle, which is supplied by the same nerve (third cranial). When the internal recti is over-stimulated, and an increased work put on it, it, too, may also become thickened, shorter, and stronger.

As this internal recti muscle becomes stronger and possibly shorter, its strength and action overbalances its fellow on the opposite side, the external recti, since this over-stimulation and increased work of the accommodating muscles have not affected the external recti, as it receives its nerve supply from an entirely different source, the sixth cranial nerve. This unbalanced condition of the muscles, especially the extra-ocular, produces a squint.

This squint is at first usually periodic or alternating, and possibly may remain so, but more commonly becomes constant or a concomitant squint.

There are two conditions of the recti muscles which act to retain the squint, which of course may be produced by other causes than the extra-ocular muscles.

1. The recti on the squinting side may be abnormally strong or abnormally short, or both.
2. The recti on the opposite side of the squint may be abnormally weak or abnormally long, or both.

We may find the first named condition with the opposite recti perfectly normal; the second named condition with its opposite recti perfectly normal; or we may find both named conditions existing together, both external and internal recti muscles abnormal in the same eye at the same time.

TREATMENT.

Since we have found that the majority of cases of squint are produced either directly or indirectly by an error of refraction, it is imperative that we ascertain and estimate the refractive error, and correct it. This estimation and examination should be done carefully and thoroughly, and always under a reliable cycloplegic. This is not the time or place to use merely a mydriatic and one that is temporary and transient, but we must thoroughly paralyze the muscles of accommodation with atropine and keep them at rest from two to four days, before attempting an accurate estimate of the refraction of the eye.

The refraction of a squint should always be a static refraction, that the latent as well as the manifest error may be found, and a total correction prescribed.

With a static refraction and lenses prescribed for the total error with full correction, we may be able to completely relieve the symptoms and cure the squint; provided, however, that it is yet in its incipency, that it is yet periodic or alternating, or that the deviation is only of a few degrees.

Refraction, or correcting the refractive error, will not cure all cases of squint, and I am sorry to say, not even the majority of cases, possibly due to neglect of the patient or the parents of the squint until the extra-ocular muscles have developed that unbalanced condition of strength and length. However, this is no argument against a static refraction and its proper and total correction with lenses; for even if the lens correction does not cure the squint, and an operation must be performed on the extra-ocular muscles, to correct the deviation, the lens correction will yet need be worn continuously after the operation, to prevent the same cause having the same effect again.

No surgeon, except the ophthalmic surgeon, who can correctly estimate and correct the refractive error, should attempt an extra-ocular muscle operation for squint.

OPERATION.

As has been previously stated, nearly all cases of squint will require a muscle operation in conjunction with correction of the refractive error.

Since so many of these cases are neglected, we frequently find great impairment of vision of the squinting eye, and this examination may be the first revelation to the patient, that the vision of the deviating eye is entirely lost.

The reëstablishment of binocular vision is the ideal result aimed at in the treatment of squint, but this result depends largely on the character and degree of amblyopia in the deviating eye.

Amblyopia may be so great in the deviating eye that its error of refraction cannot be corrected by lenses, or even if mechanically corrected, will not give the desired results.

Binocular vision may not be obtained either by the adjustment of glasses or by any operative procedure, but both should always be done, even in cases of greatest amblyopia (under a guarded prognosis as to improved or binocular vision), for their cosmetic effects.

Many different operations and modifications of other operations have been proposed and performed, with varying degrees of success, but since there is one or both of only two conditions or indications to be met in each case, then one or both of only two operations are to be performed to meet the required indication in each case.

In selecting one of the two operations to be done, we should take into consideration the recti which is abnormal, or the one at fault in maintaining the unbal-

anced muscular condition of the deviation.

If it is the first of the ones named above, *i. e.*, the recti on the squinting side, being abnormally strong or abnormally short, or both, then the best selection is one which will best correct the defect in this same muscle, by making it longer, or weaker, or both.

Panas' operation, which is a modified and complete tenotomy, admirably fills both these indications, and is one which the majority of ophthalmic surgeons perform and are agreed upon.

If it is the second condition of the ones named above, which is directly opposite the one just described, *i. e.*, the recti on the opposite side of the squint may be abnormally weak, or abnormally long, or both, then we must select an operation which will best correct this defect, in the same muscle, by making it stronger or shorter or both.

The Tucking or Loop operation, which I was taught by Prof. Francis Valk, of New York, and which he claimed to me was altogether devised by himself, and which bears his own name in the East; but I have recently learned through Prof. G. C. Savage, of Nashville, that he (Savage) and not Valk was the originator and deviser of the operation, and that he had performed it many times before Valk ever thought of it. I was sorry to have been misinformed in regard to the originator of this splendid and successful operation, but was glad indeed to learn that one of our own home men, here in this great Southland, even here in sunny Tennessee, could be the author and originator of such a perfect operation, when properly applied to its selected case.

This Tucking operation shortens and strengthens the long, weak muscle on the opposite of the squint, thereby pulling the eye back to its normal position.

You may ask here, how would I deter-

mine which one of the recti is at fault? I would measure the strength and relative strength of each recti muscle of each eye, with prisms; measure the amount of squint with the parimeter or strabismometer, and then if not thoroughly satisfied of their length and strength, I would begin the Panas' operation on the muscle of the squinting side, and before severing the muscle you can measure its length and test its strength simply by one of the steps of the operation, *i. e.*, while you have the muscle on the strabismus hook.

Frequently we will find both of the above named conditions acting together in maintaining the squinting eye in its deviating position; especially is this true in neglected cases which have existed for a long time without correction and treatment, and is found in nearly every case which has marked amblyopia, or the vision in the squinting eye has been lost.

The very nature of the opposing muscle to the one that is first at fault is, by its overstrain, to become at fault also in the opposite way, by a continued deviation of the faulty muscle. For example, take a case of long standing convergent squint with marked amblyopia, where at first the rectus internus is at fault by being overworked by the stimulation of the third nerve, transmitted to it by fibres of the same nerve which also supplies the overworked muscles of accommodation; and in due course of time the rectus externus, which has been overstretched by the strong action of the rectus internus, becomes longer and weaker, and finally almost loses its contractile power; especially does it lose its power to contract sufficiently to pull the deviated eye the required number of degrees, even after the rectus internus has been tenotomised. In the class of cases just mentioned, the indication is plain that both internal and external muscles are at fault, and both

should be corrected by a separate operation being done on each of these muscles, and not the same operation done on the internal rectus of each eye as is frequently done. I would here advise a Panas operation on the rectus internus and a Tucking operation on the rectus externus.

This Tucking or Loop operation, which is always to be done on a long, weak muscle, and of course the one on the opposite from the squint, is, as I consider it, the best and most successful of all operations for this purpose, and should supplant all of the operations done for this particular indication, such as advancement of the muscle, resection of the tendon, or resection of the belly of the muscle.

I will briefly describe the technique of this operation, as I do it, and then allow any one to claim it who may desire.

With the speculum introduced, the conjunctiva is caught and slightly lifted up over the tendon of the muscle to be operated upon. With the scissors the conjunctiva is snipped and then dissected back with the blunt point of the strabismus scissors. The muscular tendon is then freed or separated from the sclera, and picked up on the strabismus hook. (Up to this point every step of the operation would be the same as if a simple tenotomy was to be done.) Next we introduce the second strabismus hook by the side of the first one, and then taking one hook in each hand, we separate the two instruments as far as practicable, at the same time making tension on the tendon by the separation of the two hooks. We then introduce between the two hooks, which are separated, the Valk twin strabismus forcep, closed, and as it is allowed to open out that it may retain itself, we remove both the strabismus hooks and use them no more. We now have the long, weak muscle on the stretch

and elevated above the conjunctival incision, and held in position by the Valk forcep, like a tape passed over two of our fingers and both ends held down tight below them. The Tuck is now made by introducing a small catgut suture armed with two needles. The first suture is introduced near the edge of the tendon on the outside of the forcep, next to the canthus. This same needle is carried under the forcep and introduced in the same edge of the same tendon, but from the under surface of the tendon this time, and brought out at the other side of the forcep.

We next introduce the other needle at the other end of the same suture, opposite the first suture, and it is carried to exactly the first suture, except that it is on the other edge of the tendon.

We now remove the needles and tighten on the suture until the under surfaces of the tendon are brought together where the sutures passed through it, and thus the Tuck or Loop is formed, and the suture tied. The forcep is now removed and the conjunctiva closed.

Adhesion of the two surfaces of this tendon soon takes place, the sutures are absorbed, and eventually this tuck or loop of tendon, which may appear rather large at first, undergoes atrophy and possibly absorption, until it is reduced to normal or is entirely unnoticeable.

DISCUSSION OF THE PAPER OF DR. DOTSON.

DR. G. C. SAVAGE, of Nashville:

Mr. President—I saw an abstract of Dr. Dotson's paper yesterday afternoon, but did not know what he was going to say about the "tucking" operation, although he spoke of it in his paper as Valk's operation. I then began to formulate my thoughts on the subject.

My operation for shortening the rectus muscle was first described in the *Ophthalmic Record*, March, 1893. This operation is simple, effective, and free from all prominent risks incurred in any of the advancement operations. In this, as in many other operations on the eye, cocaine

anesthesia can be relied on. The first step of the operation, as originally done, consisted of a vertical conjunctival incision one-eighth of an inch behind the insertion of the tendon and a little longer than the muscle is wide. From the lower extremity of this cut a horizontal conjunctival incision was made one-quarter of an inch long, near to, and parallel with the lower border of the muscle. The triangular flap of conjunctiva was then dissected up and held out of the way by an assistant. The second step of the operation consisted in passing a strabismus hook beneath the tendon and in making a slight dissection of the connective tissue and capsule of Tenon at the upper and lower borders of muscle. Everything was then ready for the last operative procedure, the taking of the stitch for shortening the muscle. A thread was armed with two needles slightly curved. One needle was passed through the muscle from its outer surface and was brought out beneath the lower border of the muscle; the other was passed in the same way, but was brought out beneath the upper border of the muscle. The amount of tissue thus included in the loop was not more than one-quarter the width of the muscle; and the distance of this loop behind the insertion of the tendon depended upon the amount of shortening desired. The muscle was held away from the globe by fixation forceps while the needles were being passed as above indicated. The operator now taking the hook in his own hand draws it slightly back and, at the same time, gently lifts the tendon from the globe. He now takes needle No. 1 and pierces the tendon from the ocular side, at its point of insertion and between the center and its lower border, bringing it out through the conjunctiva over the insertion, then removes the needle. In a similar way needle No. 2 was passed through the tendon between its center and upper border and was brought out through the conjunctiva over the insertion. This needle was then removed. The two ends of the one thread were not more than one-eighth of an inch apart, as they emerged from the tendon. On tying the knot in the usual way, that part of the muscle at the loop was brought in contact with the tendon at its insertion, and was there confined by completing the knot. The triangular flap of conjunctiva was now allowed to fold over and cover in the exposed muscle, including its "tuck." The stitch was allowed to remain from four to six days, depending on the inflammatory action excited. The stitch excited sufficient inflammation to bind the parts in their new relationships and thus the shortening was

made permanent. As in advancement, so in the shortening, it was found necessary to do a partial tenotomy of the opposing muscle.

The operation described as a little later modified I have done many times, with much satisfaction.

With regard to priority, I will say that Dr. Francis Valk wrote me under date of August 15, 1895, as follows:

"Dear Dr. Savage—Your letter received. I looked up the edition you refer to in the *Ophthalmic Record*, March, 1893, and now have no doubt that you are fully entitled to the credit of what seems to be an excellent operation."

This operation (muscle shortening, rather than advancement) should be done in nearly all cases of heterophoria, in which the indication is to increase the tension of the muscle. Not only can this operation alter the tension of the muscle, but it can also be done so as at the same time to change its plane of rotation. Its advantages over the advancement operation are three: First, it is easier of accomplishment, though a little more painful; second, its plane of rotation is less likely to be changed when there is no indication for changing it; third, the stitch is not so likely to cut its way out, and if it does so, or if the knot should become untied, the case would be no worse than before the operation; whereas, if either of these accidents should happen to an advancement, before adhesion has formed, the recession of the muscle might be farther back than its original attachment. However, in some cases of heterophoria, in which the indication is to increase the tension, the muscle attachment is so far back, or the muscle itself is so small, that an advancement must be done.

The shortening operation I now do for simply increasing the tension of the muscle is done as follows: Lids must be widely separated with the speculum. The conjunctiva must be seized with the forceps, so as to be thrown into a fold parallel with the corneal margin, behind the tendon insertion; and this conjunctival fold, if the muscle be an externus or an internus, must be cut with the scissors a little below the border of the muscle; but if it be a superior or inferior rectus, the cut must be to the nasal side of the muscle. Through this cut the capsule of Tenon is grasped and cut in line (meridionally) with the conjunctival cut. Through the opening thus made one of the large strabismus hooks is passed beneath the muscle and drawn forward

until stopped by the attachment of the tendon; then, through the same opening, the second large hook is passed beneath the belly of the muscle and carried backward, at the same time lifting the muscle from the sclera, so as to show the extent of the possible shortening. If the opening in the conjunctiva and capsule, by being too small, should stop the second hook too soon, it should be enlarged toward the equator by a cut or two of the scissors. Having already armed the No. 7 silk with two needles, the operator places one of them in the needle-holder, and, passing it through the cut beneath the muscle, forces it through the upper border of the tendon, close to the sclera (if an internus or an externus, but the outer border, if a superior or inferior rectus), and brings it out at once through the tendon capsule and conjunctiva. While doing this the tendon is held up by the first hook and the needle is passed between this hook and the sclera. No other puncture will have to be made with this needle, but it should remain on the suture so as to facilitate the passing of that end of the suture through one of the holes of the Price suture plate later. The first hook remaining under the tendon and still held by the operator, the assistant is directed to pass the other hook as far back beneath the muscle as possible, at the same time lifting the muscle well from the sclera. The operator, with the second needle in the holder, passes it through the opening beneath the belly of the muscle as far back as he wishes, when he forces it through the muscle, then through the capsule and conjunctiva, so that a line connecting this and the first puncture shall be parallel with the plane of rotation of this muscle. The suture is now drawn on so as to make the thread disappear beneath the muscle; now the operator passes the same needle through the conjunctiva, capsule, and the other border of the muscle, bringing it out through the cut in the conjunctiva and capsule. The third puncture is so made that the loop of thread passing from the point of the second puncture to it, and lying on the conjunctiva, shall be parallel with the equator of the eye. Now the assistant's hook may be removed. The surgeon again places the second needle in the holder and passes it through the cut beneath the tendon, which he still lifts with his own hook, and forces it through the lower border of the tendon close to its insertion, and brings it out through capsule and conjunctiva, so that a line connecting the first puncture and this, the fourth, shall be parallel with the corneal

margin, and the line from the third to the fourth puncture shall be parallel with the plane of rotation. Drawing on this end of the suture, that part of it between the third and fourth punctures disappears beneath the muscle. The operator's hook is now removed, and the two needles, after being made to carry the two ends of the suture through the holes in the silver plate, are also removed. It only remains to tie a surgeon's knot over the plate, drawing sufficiently hard to bring forward that portion of the muscle lying beneath the loop which rests on the conjunctiva, until it rests in contact with the tendon at its insertion. The knuckle of muscle, capsule and conjunctiva, thus made demands no attention, since in the course of a few weeks it disappears by absorption atrophy. The patient will complain some at the first two passages of the second needle, and also of the drawing brought about by tying the knot. The after-treatment is the same as that for partial tenotomies.

If a shortening is to be done so as not only to alter the tension of the muscle, but also to change its plane of rotation, the operation differs from that already described only in the making of the four punctures while placing the suture. Let the condition to be relieved be an asthenic exophoria complicated by a plus cyclophoria, in shortening an internus it should be that one belonging to the cataphoric eye, provided there is a vertical error; otherwise both interni should be shortened. The first needle should be passed as nearly as possible through the upper border of the tendon; the second needle should make its first puncture through the muscle below the plane bisecting it, while its second puncture should be made as near as possible to its lower border. The third puncture with the second needle should be made between the first puncture and the plane bisecting the attachment of the tendon. Thus it will be seen that the first and fourth punctures are above the natural plane of rotation, while the second and third punctures are below this plane. In tying the knot, the lower border of the muscle is carried upward and in this way the muscle is given a new and higher attachment, and thereby the plane of rotation is correspondingly elevated.

If the external rectus must be shortened to cure an asthenic esophoria complicated by a plus cyclophoria, the position of the punctures should be reversed; for in such a case the plane of rotation must be depressed by the creation of a lower attachment, and both externi must

thus be operated upon. If there is also a hyperphoria, this operation should be done only on the externus belonging to the hyperphoric eye.

If the superior rectus is to be shortened to cure an asthenic cata-cyclophoria of the eye to which it belongs, the first and fourth punctures must be to the outer side of its old plane of rotation, while the second and third punctures should be on the inner side of this plane. Tying the knot will create a new attachment farther toward the temple than the original one. Thus the plane of rotation is shifted out. Just the reverse must be true of the punctures if they are to be made on the inferior rectus with the view of curing an asthenic hyper-cyclophoria of the eye to which it belongs. This would shift its point of attachment toward the nose, carrying the plane of rotation with it.

Partial shortenings may be done for the relief of cyclophoria when there is no special indication for altering the tension of the whole muscle. In such an operation all the needle punctures should be made on the same side of the muscle plane. To illustrate: There being but little exophoria, the existing plus cyclophoria may be cured by changing the plane of both interni without greatly increasing the tension of these muscles. For the accomplishment of this the conjunctival and capsular cut must be at the upper border of the muscle; the needles must be passed through four times entirely in the upper half of the muscle and tendon; and the space between the insertion of the tendon and the loop of the suture must not be anything like so great as in a shortening of the whole muscle. Tying the knot over the suture plate folds only the upper part of the muscle, the power of this part being thereby increased. The same operation should be done on the internus of the fellow eye.

If the partial marginal shortenings to cure a plus cyclophoria is to be done on the externi, the lower margin of the muscle and tendon is the part to be folded, and the effect should be divided between the two externi. If for the same condition the operations are to be done on the superior recti, the suture must be taken in the temporal margin of each. If on the inferior recti, the inner margins only must be folded, but better and easier than partial

marginal shortenings would be marginal advancements.

Dr. Dotson (closing the discussion): I do not feel that I am to blame for mentioning the operation I have described as the Valk operation. While it was mentioned in my abstract, I did not mention it in my paper. A number of years ago, when I was in school in Nashville, I remember seeing Dr. Savage do a number of squint operations, but I do not recall seeing him do this particular operation he has described. I never heard of the operation until I saw Valk do it, and he told me it was his operation. I read Valk's description of it in his book, which, Dr. Savage says, was published five years after he devised the operation. Dr. Valk told me a number of times that he wished he could get Dr. Savage to quit doing partial tenotomies. I was firmly impressed that this was Valk's operation until a short time ago, but I am glad now to give credit to Dr. Savage, and shall do so from this time on. Dr. Savage spoke of not doing a complete tenotomy. He does not think we should ever do a complete tenotomy, that we should not do a Panas' operation. I have seen many failures from partial tenotomies. I had a case in my office a short time ago, the patient having been operated upon six times, partial tenotomy having been done. It occurred to me that the condition of his eye was worse than it could have been before any operation was done.

I remember being present one night at a meeting of the New York Academy of Medicine when Panas' operation was discussed, when Dr. Peck reported 225 cases of Panas' operation done some years ago, with perfect results in all but five cases, as was subsequently proven by later examination. These five cases he had not been able to trace. My experience in looking at these cases is that when we cut a muscle entirely in two by a complete tenotomy or Panas' operation, our results are under-corrected rather than over-corrected. My observation of the work of others, has led me to believe that when a tenotomy is required, that it should always be a complete tenotomy; and that partial tenotomies are experimental and meddling surgery.

SURGERY OF THE THYROID GLAND.

R. M. M'COWN, M. D., KNOXVILLE.



IN writing on the surgery of the thyroid gland, it is but to be expected that I cover a very limited field; first, on account of the lack of knowledge concerning the gland, and for lack of experience in the South by us all.

This lack of experience has been due to a lack of interest, clinical material and to our conservatism, for it has long been a mystery, and in the train of the operator for many years followed serious complications, as hemorrhage, myxedema, tetany, etc.

We cannot operate intelligently upon organs without a full knowledge of their internal as well as their external secretions, for herein may lie the cause of failure of a mechanically well executed operation.

The struggle for supremacy between all the internal secretions and the central nervous system gives rise to many irregular functions and symptoms, and the discordance of the results points to the physiological moral, that the phenomena which we are able to observe forms only a mere surface covering, and that behind the curtain of the internal secretions lies a field as far away and as mysterious as anything in medicine.

ITS BRIEF ANATOMY.

It is classed as one of the ductless glands, consisting of two lateral lobes and an isthmus. Its weight in the adult normally is one to two ounces. The lobes are about two inches long, one inch thick and one-half inch in breadth. Its relations anteriorly are the superficial muscles of the neck, latterly it lies in contact with the sheath of the common carotid artery. Posteriorly the concave surface embraces

the trachea and larynx, extending back as far as the lower part of the pharynx. The isthmus is one-half inch in breadth and one-half inch in depth and lies on the second and third rings of the trachea.

THE PARA-THYROIDS.

Usually four in number, two upper and two lower, are imbedded on the dorsal side of the thyroid gland in loose, connective tissue which surrounds the thyroid gland. Their normal size is one-third inch in length, one-sixth inch in width and one-twelfth inch in thickness. The thyroid gland is surrounded by a thin layer of deep cervical fascia, which forms the external capsule, and is adherent to the connective tissue that envelopes the trachea, pharynx and esophagus.

The capsule proper is a very thin connective tissue membrane, and is not detachable, because it dips into the interior of the gland, forming a network which separates the individual gland tubes, and affects an arrangement of gland lobules. In this network is found the blood vessels and nerves. In the external capsule posteriorly in the groove between the trachea and esophagus is the recurrent laryngeal nerve.

The blood supply is by two symmetric arteries, the superior and inferior thyroids. The superior comes off from the external carotid, the inferior is a branch of the thyroid axis.

FUNCTIONS.

The function of the thyroid gland is not very well understood, but we know it plays a very important role in the metabolism of the body. Its chemical analysis reveals albuminous substances, globulins and nucleins, but most characteristic is

the high iodine content. A direct relationship between it and the histologic structure exists and both vary with (1) functional state, (2) locality and (3) nutrition.

The epithelial cells of its follicles represent the most important functions, by taking up certain substances from the blood and altering them in some unknown manner. But so far as analysis proves we are not dealing with an intra-glandular process having for its purpose to locally destroy toxic substances. The increase of vital activities, growth, metabolism, mental powers, etc., which the extract procures, and the symptoms that occur after removal of the gland indicates a direct relationship with a physiological function.

FUNCTION OF THE PARA-TYPHOID GLANDS.

They probably have for a part of their function the preparation of certain toxins for rapid elimination. If they are removed death ensues from tetany. It was thought for a long time the tetany following a thyroidectomy was due to the thyroid absence until the disturbance of the parathyroids were proven to be the cause.

DISEASES OF THE THYROID.

To classify them is very difficult, because of the lack of clinical and anatomical harmony. But to discuss them briefly I will do so under the head of (1) Goiters, (2) Thyreotoxic diseases. By the term goiter is meant a disease of the thyroid, occurring in that structure only, and under this head are many varieties, nodular diffuse, hypertrophic follicular, colloid, fibrous, vascular, etc.

Only one lobe, or a portion of one lobe, may be affected, and the symptoms may be nothing more than mechanical and physical. Accompanying or following some forms of goiters may be a thyreo-

toxic condition or a deficient secretion. They may become malignant, and are then treated as a malignancy in any other portion of the body.

THYREOTOXIC DISEASES.

Basedow's disease represents the well-developed forms, and here the surgery of the gland presents its gravest aspect. The etiology still remains a mystery. It seems well established that the symptoms are due to an increased absorption of an increased secretion of the gland. This increased secretion is due to an increase in the parenchyma of the organ, either within the alveoli, or there is an increase in the number of the alveoli themselves. It is rare in men. It affects women most often between the ages of 16 and 40 years, or during the period of sexual vitality. There seems to be some hereditary tendency, and it is often consequent upon fright, mental strain, shock, worry and may follow any acute illness.

SYMPTOMS.

The disease when fully established is easily recognized: one can make the diagnosis from a group of five symptoms, exophthalmus, tachy-cardia, tremor, low leucocyte count and the enlarged gland. One-fifth of the cases may show no exophthalmus or goiter for a long time, and prior to the appearance of the two symptoms the case may be hard to make out, and the patient may be treated for heart disease and various other troubles. The most important early symptoms are those of the vascular system. The tachycardia varies from ninety to 150 beats per min., and is increased on slight exertion. The exophthalmus is bi-lateral. There is widening of the palpebral opening, a lack of convergence of the two eyes, and the upper lid does not follow the eyeball when it is rotated downward.

BLOOD.

The red cells are normal, but the white cells are diminished sometimes as low as 4,000. Kocher has observed that the coagulation time of the blood is diminished. General symptoms: excitability, muscular weakness, anemia, emaciation, vomiting, and there may be albumin or sugar in the urine. In a doubtful diagnosis iodine or thethyroid extract may be administered and the symptoms will be increased, particularly the palpitation of the heart and the tremor.

TREATMENT.

The largest part of the treatment of goiters belongs to the internist, but it is through the work of surgery that we have gained much of our knowledge, and the internal treatment must be based on an accurate investigation of the gland and the patient. The indications for operative treatment are various and in many cases the only procedure. It is necessary in malignant affections, in degenerative nodular goiter, those causing pressure symptoms, those sensitive on pressure, those causing pronounced cardiac symptoms, and in some forms of abnormally situated goiters.

In Basedow's disease to say that a surgical procedure is best is not enough, operation is indicated in all cases that do not show a degenerative heart muscle, with irregular pulse, and low blood pressure, periodical attacks of delirium cordis, and with those cases associated with an enlarged thymus gland. The mistake most often made is not operating early. In the hands of competent surgeons in the past few years the mortality has ranged from two to four per cent, which is not greater than in the majority of all capital operations, and the percentage of cures range from seventy-five to ninety per cent. Halstead reports ninety cases at Hopkins

with only two deaths. Mayo 176 operations with eight deaths and seventy per cent cured. In his last seventy-five cases he reports only one death. Kocher reports 153 cases with two deaths, and eighty-three per cent cured. The question of anesthesia is only one of personal preference. I prefer general anesthesia.

The technique of operating upon these patients has improved very materially, and it has been correctly said not to do too much at one sitting. The point in view in all cases is to diminish the secreting power of the gland, and try to restore a normal function. An excission in advanced cases, without any preliminary steps or treatment, is a mistake. By tying one or more of the vessels going into the gland, or by removal of only a portion of the gland, either of which may help to equalize the secretion, and in some cases may bring about a permanent cure, at least an improvement in the symptoms, and the tying of the vessels makes a secondary operation safer and easier by diminishing blood supply. The tying of the vessels can usually be done under local anesthesia.

In the advanced cases, after one or more of the vessels have been tied, if the patient shows no improvement, then an excission of the gland must be done, and the amount of gland substance not removed in any case is left to the opinion of the operator.

Before closing the wound all hemorrhage must be completely controlled and a small drain inserted at the lower angle of the incision, as the excitement, nausea and vomiting may cause profuse hemorrhage, with pressure of the trachea, and in any case when respiration becomes difficult after operation hemorrhage should be looked for.

In removing the gland there should be as little masceration of gland substance as possible, because the gland juices may

increase the symptoms, especially the heart beat and nervous conditions. The after treatment is the same as in any other major operation.

DISCUSSION ON THE PAPER OF DR. MCOWEN.

DR. WILLIAM D. HAGGARD, of Nashville:

Mr. President: I have been interested recently in some experiments which have been made upon the artificial production of goiter, and which may have something to do with its etiology. It has long been known that goiter is a disease connected in some way with the water supply. It has been found that if the water is filtered it decreases the incidence of goiter. Of thirteen individuals who took the filtrate, four of them developed goiter. It was afterwards observed that if the same filtrate was boiled for ten minutes, the patient to whom it was administered would not develop goiter. Therefore, it would seem that there are some bacteria in the sediment with which we are not as yet acquainted that may be causative of goiter. This is another reason, though of lesser importance, to emphasize the wisdom of the routine sterilization of water for drinking purposes.

It is quite well known that in Switzerland, where goiter is almost endemic, there are cases that are artificially produced in young men, who wish to avoid entering the army. They develop this disease artificially and are released from service. The condition in this country is comparatively rare. Cases of goiter have been looked upon merely as a sort of disfigurement, and when the real intoxication of Graves' or Basedow's disease develops, for a long time it was considered inoperable. We have not been keenly enough alive to the frequency with which simple goiter degenerates into the exophthalmic type with its hyperthyroidization and lethal tendencies. But now the disease has been put upon a sound surgical basis in this country, we are seeing in one clinic a large number of these cases that are operated upon, several hundred a year. I have seen in the Mayo clinic as many as five operations for goiter in one day, and it is really incredible to notice the safety with which the operation is done.

The selection of cases is important, and it is here that great surgical discrimination is required. Take the cases with rapid pulse, emaciation, swollen feet, ascites—the bad cases, that would die within a few weeks if let

alone. Let them alone. Such patients are not suitable for a complete operation, and they should be allowed to die under medical treatment instead of surgical, unless, perchance, the superior thyroids alone can be ligated, and this can be done under local anesthesia, and within a few weeks or months the enlarged gland can be removed with safety; whereas, if the patient is operated on without this preliminary improvement, the result will doubtless be fatal. By so doing we transfer the dying into the living class by the temporary ligation of the blood supply. In speaking of the blood supply, we ought to be careful in ligating the superior thyroid not to include any muscle tissue, but ligate without including any of the muscle tissue in the bite of the forceps. If the muscle is included in the ligature, the ligature is apt to slip and hemorrhage may occur either while the patient is on the operating table or thereafter.

I expected the essayist to have said more in regard to the medical side of the serum treatment of exophthalmic goiter. Beebe and Rogers take the fluid from the exophthalmic goiter itself after removal and make a serum, which, in some cases, has proven curative.

I agree with the author of the paper, that all cases of Basedow's disease should be operated on in their incipency, if possible. Only the biggest part of the gland should be removed, and never all of the gland, because then we get myxedema, which has been referred to. Furthermore, we should be very careful about the parathyroids, and the best way to avoid removing or injuring the parathyroids is to brush back all structures from the capsule with gauze. If we remove the parathyroids, then trouble will ensue.

DR. BATTLE MALONE, of Memphis:

I am very glad, indeed, to have heard this paper. I think the Association is indebted to the doctor for presenting this subject.

I agree entirely with what he has said regarding the surgical treatment of goiter. He did not, however, call attention to one form of medical treatment to which Senn, in his text-book on "The Pathology and Treatment of Tumors," has called our attention, namely, the use of iodine in simple hypertrophy of the glands. Senn gives an excellent classification of the different enlargements of the thyroid, and states very positively that where we have a simple hypertrophy of the glands, without any tumor formation, the goiter will disappear under the use of iodine, and I have

found by experience that to be true. The goiter disappears in a remarkable way under the use of iodine.

There is another point which I desire to mention, namely, I do not think the Doctor gave the men who have done the greatest amount of work in this branch of surgery full credit. The Mayos have done over one thousand of these operations; and Kocher has done over three thousand of these operations, with a mortality of about three-tenths of one per cent.

The essayist did not mention one subject to which considerable attention has been given, and that is the use of local anesthesia in removing the thyroid. Halsted, of Baltimore, has done a great many of these operations under local anesthesia. Probably Halsted can do these operations under local anesthesia, as can also the Mayos, but personally I should prefer not to attempt it. One of the most embarrassing sights I have ever seen was that of a well known and very competent surgeon of Chicago, who, in his attempt to do a thyroidectomy, under local anesthesia, made a dismal failure from the standpoint of the anesthetic. It was really a pitiful sight, and that surgeon sweat blood before he got through.

DR. E. L. BURCH, of Nashville:

This is a very important subject, and one to which the profession of the South have not given the attention that it deserves. The reason for this is that many practitioners are of the opinion that if the thyroid is removed the patient will either die or will have myxedema, or will become insane, or will have some skin disease.

The mortality following operations for exophthalmic goiter in the hands of the best surgeons is about five per cent. Of the ordinary goiter, it is about two per cent. The most important part connected with the operation is not only the careful selection of cases, but also the time of operation and the preparation of the patient. Crile has recently brought out and shown to the profession that many of these patients die simply from the fear of the operation, and he is doing now what he calls "stealing the gland." He first obtains the consent of the patient to operate. He tells the patient that he will get him in the best possible condition, and then when that time arrives he will operate. He does not mention any specific time. Each morning he has his anesthetist go into the patient's room and place a mask over his face and drop some volatile oil on the mask. Each

day the strength of the oil is increased, and very soon he gets the patient accustomed to the smell of ether, and when the patient's condition is good, without telling him he is going to operate, he administers the anesthetic, and removes the gland. He finds that by adopting this plan the mortality has been very much decreased.

A great danger connected with the operation is tetany, which will not occur if the operation is carefully and properly performed. Again, there may be hyperthyroidism, and the greatest of all dangers is hemorrhage. Hemorrhage can be avoided if we carry out the procedure mentioned by Dr. Haggard, namely, the careful placing of the ligatures and the taking up of the artery alone.

Rogers and Beebe, of New York, have recently been using a serum with great success. However, this is a new procedure, and what the ultimate results will be it is as yet too early to say. They claim to have cured seventy-five per cent of cases, and have had a mortality of ten per cent. This seventy-five per cent of cures is rather recent, and it may be, in the course of time, it will be found that these patients are only improved, and not really cured.

DR. R. E. FORT, of Nashville:

The subject has been so thoroughly discussed, that it is hardly necessary for me to go into details. I wish to call attention, especially to one procedure which has been practised, and one which we should all avoid, and that is the application of the X-ray. I did not hear all of the Doctor's paper, and I do not know whether he mentioned the use of the X-ray or not. I think its use should be avoided, because it produces a fibrous condition of the gland, which makes it difficult to remove subsequently. The gland cannot be dissected so readily when the X-ray has been used, and I find that the mortality is increased where the X-ray has been used.

Again, I would suggest that general anesthesia be used. Kocher has done a large number of these operations under local anesthesia, but the trend of the day is the use of general anesthesia. Patients will take it well, and the mortality in the hands of surgeons in this country, who have done these operations under general anesthesia, has been so satisfactory that I believe it should be almost invariably used.

DR. McCOWN (closing):

The question of anesthesia is only of personal preference; to my mind general anesthesia is

best. Dr. Fort spoke of the X-ray in the treatment of goiters only to condemn it, which is entirely correct. I am glad Dr. Haggard emphasized the importance of an early operation more especially in Basedow's disease. I think it is very bad judgment to wait and then to operate in the advanced stages. I wish to report three cases that have come under my observation recently.

Case No. 1. Female, single, age twenty-five, school-teacher, enlargement of right lobe, very nervous and irritable, complained of pressure symptoms, tachycardia, 110 to 120, palpitation on slight exertion, otherwise in good health. I ligated the superior thyroid artery under cocaine, the lobe diminished in size, nervousness

disappeared, heart beat is now eighty-five to ninety, all symptoms are very much improved.

Case No. 2. Colloid goiter, male, age 30, came complaining of pressure symptoms only. I removed the left lobe and a greater portion of the right lobe, leaving a portion of right lobe, and isthmus. The wound healed nicely and at present his general health is good.

Case No. 3. Enlargement of the left lobe, male, age fifty-two, complained of pressure symptoms, pain in the gland, tenderness on pressure, shortness of breath on slight exertion. I removed the left lobe under cocaine, no complications, general condition now good, symptoms all disappeared.

I thank the members for their discussion.

CANCER OF THE BREAST.

GEO. R. WEST, M. D., CHATTANOOGA.

THE renewal of the discussion of this much talked and written subject would be more excusable had I anything new to offer.

My association with other physicians, and my knowledge gained from the laity impressed me with the fact that there is a purpose to be accomplished, even if that is only to boldly acclaim that we know nothing new on cancer, that the knife is the only means to rid the system of it, and that should be done so early in the course of the disease that the ordinary and usually recognized symptoms of the disease cannot be depended upon.

After beginning the preparation of this paper I saw the article by Dr. Haggard, which was read before this body two years ago. After reading that article, I saw that all I could hope to do in another paper on the same subject so soon was to present to you the literature up-to-date, and tell you we are in about the same place on this problem as we were two years ago and for many previous years.

We find that cancer is not confined to any race or any time; it has existed for all time and in the barbarians as

well as among the civilized races. Cancer is found in the domestic animals and in all classes of vertebrates as low down as fishes, even in the wild state. It is generally conceded that cancer is on the increase, and that in connection with the idea that we are not curing any more should make us redouble our caution in offering the only help to the unfortunates that lies within our power; namely, the early resort to the knife, and by that means its thorough eradication from the system.

CAUSE.

The Medical Record (N. Y.), Feb. 6, 1909, says editorially:

"The mystery of cancer is seemingly impenetrable. In spite of the constant study and investigation being pursued by many acute and trained minds in all parts of the world, we appear to be no nearer an agreement regarding the nature of cancer, its etiology, or even, we may say, its treatment, than we were ten or twenty years ago. The teachings of Cohnheim and Virchow and Beard that the cancer cell is an embryonic rest which in some

way becomes stimulated into growth is still held by many; not a few regard the cancer cell as itself a parasite, while others consider it to be simply an epithelial cell stimulated to riotous growth by a micro-organism or its toxin. And so we might go on with an enumeration of varied and usually conflicting theories, the mere mention of which would fill pages. On this one point nearly all investigators are agreed, however, and that is that cancer is at first a local disease and becomes generalized only after existing for an indefinite period. It is on this belief that the surgeon bases his insistent demand for early and radical removal of the growth.

"The opposite theory, that cancer is a general disease and the neoplasm is merely its local expression, occasioned by a prolonged irritation, over-functioning, or other factor, is held by a minority—a somewhat despised minority—yet there are some facts which speak in favor of it. One very strong argument is the fact, of which surgical writers always speak, and to which they attribute the very large percentage of failures to cure by operation, that it is almost impossible to recognize and remove the local growth early enough to prevent a generalization of the disease."

Roswell Park is a believer in the parasitic causation of cancer and consequently that the disease is primarily local, yet he says, in a paper read at the International Congress of Surgery in Brussels last September: "Sad to say, cancer is a disease without a symptomatology of its own, and is recognized, in most cases, at a period too late to permit of the application of radical surgical measures. This aspect of the disease is one which has apparently attracted as yet but little attention, and yet it is the most important feature in the management of the disease, and offers alike the excuse for non-recog-

nition as well as for failure in treatment."

In a suggestive paper entitled, "On an Excitant for the Leucocytes of Healthy Persons Found in the Blood Plasma of Patients Suffering From Carcinoma," Macalister and Ross relate certain findings which suggest the possibility that the cancerous tumor is merely the local manifestation of a disease dependent upon blood changes of a yet unknown nature. In the course of certain observations regarding the diffusion of stains in the living leucocytes, Ross discovered that the presence of atropine sulphate caused marked and constant excitation of the cells, as manifested by exaggerated amoeboid movements. At the same time Macalister had observed that patients with cancer often presented toxemic symptoms, such as would be caused by some narcotic alkaloid, and he suggested that there might be in the blood some disturbance acting as a stimulant to normal cells and exciting them to abnormal growth.

If further observation shows that the association with the neoplasm of this something in the blood, stimulating to the leucocytes, is constant, it will be a fact that cannot be disregarded in the study of carcinoma. If once the fact of the constant presence of this stimulant in the blood of cancer is established its nature would seem to be a comparatively simple matter to determine.

The reports from the Cancer Laboratory of the New York State Department of Health, for several years, furnish evidence that the malignant growth can be resisted by the organism under certain circumstances. In other cases, an arrest of the growth occurs, but afterwards the immunity is lost and the tumor begins to grow again. Spontaneous cure of mice occurs in about twenty-three per cent of cases, the chances of cure being inversely proportional to the size of the tumor.

The experiments seem to indicate that the immunity is secured by the development of some immunizing substance in the body of the affected animal, and this immunity can be conveyed in a minor degree by injection of the serum of an immune animal into the body of a susceptible animal. The investigations indicate that the cure of the malignant growth is secured, not by cytoclysis, but by some process which restores the aberrant cells to their normal functions.

A hundred years ago the Society for the Investigation of Cancer, in London, propounded for consideration the question: "Can Cancer Ever Undergo a Natural Healing?" At the present time it can scarcely be denied that the answer must be in the affirmative, in view of carefully reported cases in which cancers have disappeared after inadequate treatment or none at all; yet such cases are among the rarities of medical literature. Instructive cases have been observed in which persons have died from some unrelated affection several years after operation for cancer, and autopsy has revealed the presence in the internal organs and tissues of cancer nodules showing marked fibrotic changes with few visible cancer cells in the scar tissue. Evidently in these cases the metastases had formed before the operative removal of the primary growth, and after this event had lost their proliferative powers, and, gradually disintegrating, had been largely replaced by fibrous tissue. During the operative manipulation of the primary growth considerable quantities of cancerous material may be forced into the circulation, and the results might either be (1) a widespread dissemination of the disease, which is frequently observed, or (2) in case the resistance of the body were sufficient these cells would be destroyed, and in the process cause the formation of antibodies sufficient to enable the individual

to overcome the secondary growth which had already obtained a foothold.

SYMPTOMS.

Let us discuss a few of the time-honored symptoms. Pain is not a constant symptom; many times a patient may present herself with a nodular enlargement, and because of that, long before she has any pain in consequence of it. Dr. Rodman says that this circumstance cannot be too strongly impressed upon the general practitioner, who, though he sees comparatively few cases, usually sees them earlier than it is the good fortune of the surgeon to see them.

Up to the present no satisfactory explanation of the characteristic cachexia of cancer patients has been furnished. Repeated examinations of tumor tissues have also failed to demonstrate the presence of any characteristic toxic substances that might account for cancer cachexia. Perhaps the most reliable positive finding is the frequent, but by no means constant, hemolytic property of extracts of cancer tissue, which might account in part for the anæmia common in cancerous patients; but the typical cancer cachexia is something more than merely an anemia.

Hansman in his address delivered at Lisbon on the subject of the functions of tumor cells, recalls the numerous cases of cancer in which there is no cachexia, or in which the cachexia does not appear until shortly before the death of the patient, although the cancer may have existed for years. After an analysis of many cases, he has come to the conclusion that cancer, *per se*, does not cause cachexia. The anemia and emaciation, he believes, are due to associated conditions, for he found a pronounced cachexia only when the cancer either involved the digestive tract, or was extensively infected and ulcerated, or else when the function of many organs

was disturbed by metastatic growths. We conclude then that cachexia is an unreliable symptom of cancer and if absent does not prove the case under observation is not malignant, and if present shows that the disease has advanced too far to expect the best results from a radical operation.

When statistics show us that 85 per cent of all growths in the breast are carcinoma and 5 per cent sarcoma, making nine chances for a given case being malignant to one of its being benign, who wants to take the odds by waiting for pain or cachexia or ulceration? The mere presence of a nodule in the breast of a woman who is past thirty demands immediate removal. Don't stop to inquire in which quadrant of the breast it is growing, or if she has had a bruise or a mastitis; don't hesitate about removing it because the nipple is not yet retracted nor the nodule adherent to the skin. And what can I say about those who would wait until the axillary glands are involved? Halstead says that he had metastasis in 25 per cent of cases where no involvement of glands were proven microscopically, and a thorough operation was performed. He who advises a patient to wait for further developments for fear of removing an adenoma or a simple cyst will most certainly be responsible for the death of many innocent and far too confiding women. Halstead further says that prognosis is good, two in three being cured, and yet three in four succumb where the axillary glands are involved. We know the operation is comparatively harmless, statistics show a mortality of only 1 per cent. The operation being so slight and the danger when no interference so great, why will any patient refuse to have the operation, and why will any doctor hesitate to recommend it? All benign cases are positively cured, and one-third of the malignant ones.

TREATMENT.

In a general way let us discuss the subject of treatment of cancer of the breast.

First, when we see the patient before the enlargement of the glands, or before there is an ulceration of the skin or a retraction of the nipple, what shall we do? Urge an immediate operation if the patient is over thirty; if under, advise the removal, and tell them the chances, allowing the patient to assume the risk.

Williams, of Richmond, says concerning X-ray treatment in these cases of cancer of the breast: "I would advise the use of the knife in all primary tumors of the mammary glands, because of the uncertainty and the difficulty in reaching deep-seated malignant cells with the ray." Its use in surface or skin cancer is advocated as a cure. Morris discusses the treatment by ferments, and of these only trypsin has had sufficient time for any demonstration, while trypsin speedily removes sloughing tissue and provides a clean surface free from sepsis, thus adding to the comfort of the patient; he does not find sufficient evidence in support of more radical results.

A serum treatment has had its advocates, but with little apparent foundation. I mention these palliative measures only to condemn them. It is a false security or hope held out which in trying them causes the wasting of valuable time.

If the one cure operative procedure will do good, it must be resorted to at first, and not after other methods have failed.

It is interesting, but would consume too much time to recount the various incisions for the removal of the breast and the propriety of taking out the supra claviclar glands, or only the axillary; or to discuss the position taken by some that if it is necessary to clean out the supra claviclar and axillary spaces at all, it is already too late to operate.

Our one exhortation is to remove the disease before a diagnosis is possible.

DISCUSSION ON THE PAPER OF DR. WEST.

DR. CHARLES P. McNABB, of Knoxville:

I do not want to discuss this paper, but simply to ask a question. I have been looking up the subject of cancer in relation to cancer of the stomach, and I find that Moore reports a series of cases in the *London Lancet* for 1905, page 1121, in which he noted number of observations in cancer occurring in parts of the body outside of the stomach, finding about sixty per cent of all these cases showing the absence of hydrochloric acid in the stomach contents. I would ask those present, who have had considerable experience in operating for cancer, if they have noted a diminution or absence of the digestive ferments in cancers occurring in other parts of the body besides the digestive organs. If Moore's observations are confirmed it will go a long way in establishing the fact that cancer produces toxius, and that is strong evidence of its infectious nature. Cancer develops and spreads very much like syphilis and tuberculosis, *i. e.*, it is local in the beginning, gradually spreading to the whole system, by contiguity and through the lymphatics.

DR. J. A. WITHERSPOON, of Nashville:

In some work that I have done in the last year I have found that the old idea that hydrochloric acid is completely absent in cancer of the stomach is an error, and that lactic acid alone is present. I have found in the cases I have studied, not only traces of hydrochloric acid in the stomach, but quite sufficient to have carried on partial digestion, to say the least, and I do not believe that the old teaching of the text-books in reference to the complete absence of hydrochloric acid is correct. I have not seen the report mentioned by Dr. McNabb, so that I cannot decide whether it is located elsewhere in the body or not. I would emphasize the point that the old idea of hydrochloric acid being entirely absent in gastric cancer is erroneous. In cases just before death, particularly in one case, we could still get a reaction by the phloridzin test for hydrochloric acid in the stomach contents.

DR. WILLIAM LITTERER, of Nashville:

Dr. Witherspoon is correct in the statement that hydrochloric acid is not necessarily absent in cancer of the stomach. But the rule is, that there is an absence of hydrochloric acid and the presence of lactic acid. There are other conditions that will bring about such a result, as for example pernicious anemia. This test is simply an aid to the diagnosis, and should not be considered as pathognomonic.

With reference to Dr. McNabb's question, relative to results of stomach analyses made in individuals suffering from carcinoma in other parts of the body, than gastric carcinoma. Will say that it is a fact that quite a number of observations have been made along the line he has suggested. These observers claim that cancer in other parts of the body will give us a diminution of hydrochloric acid, many times complete absence, with the presence of lactic acid, similar to what we find in purely gastric carcinoma. In gastric sarcoma we not infrequently find identical results from the stomach contents as we do from a case of gastric carcinoma.

There was a most excellent article by Bloodgood, published in the *American Journal of the Medical Sciences* last February, in which he collected from Halstead's clinic 210 cases of cancer of the breast. Of this number of cases he finds that forty-two per cent are living three years after the operation. He calls attention to the significant fact that it is very essential to subject to microscopical examination the axillary glands, and if necessary the glands in the neck. Because in those cases that showed the absence of cancer cells in the axillary glands, eighty-five per cent were living at the end of three years. On the other hand, if the cancer cell was positive then only twenty-four per cent lived at the end of three years. Such a procedure is undoubtedly of great value as regards to prognosis. In those cases in which we find the cancerous process in the neck, only ten per cent are living at the end of three years. He does not regard a case of breast cancer as cured until eight years have elapsed, because late metastases may occur.

AMEBIC DYSENTERY AND APPENDICOSTOMY.

JOHN PELHAM BATES, M. D.,

Lecturer on Tropical Diseases, Medical Department Vanderbilt University, Nashville.



HIS paper does not assume to be an exhaustive review of the subject of amebic dysentery. Aside from a few general remarks on the etiology, it is confined wholly to my own experience and observation in this disease, and it is given as such, with the hope that it has sufficient merit to add something to the sum total to our knowledge.

It is well known that amebic dysentery is not an uncommon disease in the United States, especially in the Southern portion. It has been said by some that if all dysentery stools were carefully examined microscopically, it would be found that the majority of our dysenteries are amebic. This may be true with reference to sporadic dysentery, but this statement cannot hold good with regard to our localized epidemics of dysentery.

The part the amebae play as a causative factor in the so-called amebic dysentery is still a question in this country and abroad. The English, and most of the continental surgeons, maintain that amebic infection is a secondary, or accidental, one; that so long as the mucous membrane of the gut is healthy the amebae cannot find lodgment or do any damage; that there is no pathogenic and non-pathogenic amebae, as described by Flexnor and Chaudinn, but all the amebae inhabiting the intestinal tract are pathogenic, when through any inflammation the mucous membrane of the large gut is damaged sufficiently for the amebae to find lodgment. I hold with this view. Then given an amebiasis, a condition present in from 10 to 20 per cent of all stools (otherwise healthy) in tropical countries, and now let an inflammation occur in the large intestine from any cause

with these amebae present, there will now begin an inflammation that is specific, and thus occurs the so-called amebic dysentery. I therefore diagnose as amebic dysentery all cases where I find amebae in the stools, together with blood, pus cells, degenerate epithelial cells, and mucus; and make no attempt to differentiate whether the amebae found are the *Entamoeba coli* or *Entamoeba histolytica* as differentiated by Chaudinn; the latter, the *Entamoeba histolytica*, according to this observer being the specific ameba.

As to whether there is a pathogenic and non-pathogenic amebae, let that be as it may. What we are interested in in this paper are the methods of treatment. In order to get a clear insight to the condition we are to treat I shall review first the pathology as seen microscopically.

In a patient dead from amebic dysentery the entire colon is involved in the inflammatory process, and this inflammation may extend for some distance into the small intestine; from the rectum and through the sigmoid flexure usually is found the bulk of the inflammation. This inflammation decreases somewhat in passing upward till reaching the caecum; this portion of the gut, the caecum, again bears a considerable brunt of the disease. The gut throughout is markedly thickened; its mucous membrane is swollen, soft, intensely red, and appears to be covered with hypergranulations; its normal folds in many places are obliterated by the swelling. Ulcers of variable size and depth are present; in portions of the gut they are widely scattered; in others, the rectum, sigmoid flexure and caecum, it may be almost one ulcer. These ulcers have certain characteristics; they

are usually undermined, with small openings, or may be just the reverse, wide open and saucer shaped. The undermined ulcers are frequently connected with each other by sinuses; and these ulcers, with an opening barely perceptible, may be excavated to as large as a silver dollar underneath. All are more or less irregular in outline. Some may extend down to the serous membrane, others to the muscular coat, and some barely through the mucous membrane. Their floors vary somewhat in color, usually covered with a grayish yellow sloughing material that contains amebae. In cases that recover we naturally infer that we are not dealing with such an extensive inflammation, but from the tenderness over the entire abdomen and along the direction of the colon, there must be considerable inflammation and ulceration, varying in most cases of course with the severity of the symptoms.

The complications we would expect with the above pathological picture are hemorrhage, localized peritonitis, where the ulcers are down on the serous membrane, and perforation. We have in addition to these, appendicitis from the amebae in the appendix. I have seen one case, and general peritonitis from the amebae finding their way into the peritoneal cavity. I have seen one case of this kind also, where at autopsy there was no discoverable opening from the intestine to the peritoneum, yet there was a general peritonitis with abundant amebae in the inflammatory exudate.

ITS SEQUELLAE.

Aside from liver abscess the sequel most to be dreaded is the healing process after very extensive inflammations. In these practically all the absorbing surface of the colon is destroyed; the walls are thin, the muscular coats thinned, and in places completely destroyed; adhesions by localized peritonitis sometimes occur; strictures from healed ulcers, and so on.

Ulcers and inflamed surface now becoming a subacute inflammation, with the mucous membrane smooth, pale, and now and then large cicatrices present. The stools show very little evidence of inflammatory products, and the amebae are rarely found. The patient finally succumbs from an exhaustive and intractable diarrhea. This is a very common end for patients, who have had severe and recurrent attacks of amebic dysentery.

LEUKOCYTOSIS IN AMEBIC DYSENTERY.

I have not made a very extensive research with reference to leukocytosis in amebic dysentery, but I have covered sufficient ground, I think, to make some general statements. Leukocytosis is present in amebic dysentery, and in direct proportion to the amount of inflammation. The highest leukocyte count I have recorded is 33,800, the lowest count is 7,200. In an old subacute case diagnosed at autopsy the count was 7,500. There is also an increase in the relative percentage of the polynuclear leukocytes, and this increased per cent bears also a direct relation to the inflammation and sloughing. The highest per cent polynuclears recorded is 88, and occurred in the above case with the 33,800 leukocyte count. This man died. The lowest polynuclear per cent was 57, and occurred in the case with the 7,200 leukocyte count. A case extremely mild.

THE MORTALITY RATE.

The death rate in amebic dysentery is so variable that a record would have to extend over a number of years to get anything like an approximate estimate. I have a record during a part of the years 1905-6 of 28 cases in which the death rate was negligible, another record of a small series in 1908 in which it was a little over 25 per cent. Report: Sanitary report for 1908, 10 per cent.

TREATMENT.

In the treatment of amebic dysentery we must keep in mind the probable pathological condition of the large intestine. The urgency of the symptoms, the count of the leukocytes, will as a rule, though not always, give us a fair estimate of the amount of damage that is present. The condition, as seen from the pathology and symptoms, must be largely local, and such toxemia as is present is probably from the absorption of the inflammatory and suppurating products taking place in the large gut. Therefore the condition is surgical, plus an active organism. Then the treatment is first, rest; second, cleanliness, and third, trying to get rid of the active organism. My way of handling these patients is as follows:

The patient is put to bed, and not allowed up for any purpose whatsoever until his stools are reduced to one in 24 hours, or till the movements depend entirely on the irrigations. The diet is absolutely milk and water, till stools are one a day. For the relief of pain in the early stage, hot turpentine stupes, or ice bag if inflammation is localized, and morphia by hypo. as indicated. Colonic irrigation of normal salt solution two to three liters every three or four hours, with rectal tube and return flow. The last thing in the evening from 15 to 30 drops of laudanum is given half hour before irrigation. After thorough irrigation inject about one pint of quinine solution, at first 1 to 3,000 through rectal tube, and have patient retain if possible. The strength of the quinine solution is increased to 1 to 1,500 as rapidly as the patient can bear it. The solution is made from sulphate of quinine by adding sufficient quantity of dilute sulphuric acid. As the symptoms subside the number of irrigations are decreased, and quinine injections are also widened to every other day, and so on. Our stools are now reduced to one a day. At this

stage I assume that the mucous membrane is healed and rehabilitated with new epithelium, but the ulcers are still present. I therefore continue the management with this assumption always in mind. Hence I begin the increase of food, and allowing the patient up with the utmost care, just as rigid in this course as I would be after a severe typhoid fever. If the stools increase under this management everything is stopped and the whole process is repeated.

BISMUTH IN AMEBIC DYSENTERY.

Bismuth in full doses a drachm every three or four or six hours throughout the twenty-four will promptly relieve the pain and tends to check the number of stools, but it will form a coat of putty-like material on the walls of the large gut 1-16th of an inch or more in thickness. In post-mortem specimens this coat is washed off with considerable difficulty under a strong stream from the hydrant. And when it is removed in these specimens the ulcers found underneath it are still foul with sloughing bases, and the amebae in them still active; manifestly then any methods of irrigation with bismuth given in this manner is useless, and it seems to me that bismuth should not be given in amebic dysentery until we are certain that all surface amebae are destroyed and our ulcers clean and healing.

There are many other methods for the destruction of the surface amebae, such as thymol, silver nitrate, copper salts, etc. For the acute and recurrent acute cases I prefer the quinine. It is a parasiticide to nearly all the protozoa, and acts especially well on the amebae. With the addition of sulph. acid, the solution is made slightly astringent and antiseptic, and in the strength used will not destroy the mucous surface.

The metallic salts have their place in

the old subacute and chronic diarrhoea cases.

APPENDICOSTOMY.

I have a record of twelve cases of appendicostomy from my clinic. In these twelve cases, while general conditions were reasonably good, treatment as outlined above had failed to be of any benefit, and death appeared to be the certain end.

In the twelve cases six died within a week from time of operation. In one of the cases that died there was generalized tuberculosis in addition to the amebic dysentery.

Of the six recoveries, three were lost sight of, and three returned to the hospital in from three to six months, with recurrent amebiasis and dysentery. One of the return cases received no irrigations after the operation. In closing up the "Cris Cross" incision the lumen of the appendix was occluded, and nothing could be forced through it. Strange as it may seem, his dysentery ceased without any further interference, and he left the hospital well, to return in about five months with another attack of dysentery.

It might be said of the return cases that inasmuch as they remained in a highly endemic locality that the second attack was from a new invasion. It is just as fair to say that the recurrence from ordinary methods of treatment is due also to a new invasion. But we all know the proneness of amebic dysentery to recur. We know also that the amebæ, like people, are possessed with the spirit of "Wanderlust," and often make wide excursions; and are not only found on the surface and bases of the ulcers, but are found in the tissues snugly covered by mucous membrane and deeply imbedded along sinuses and excavated ulcers. And it must follow in due course of time through the development of these protected organisms, that there will be a recurrence of the whole process. It is no more reasonable to ex-

pect to reach these tissue-protected amebæ through irrigations from the appendix than from below.

CONCLUSIONS.

The number of cases of amebic dysentery I have treated by the ordinary methods has been well up in the hundreds, and the immediate results reasonably satisfactory.

The number of appendicostomies here given is too small to warrant too positive conclusions. But taking all of them together, I think the following conclusions are safe, and offer the best outlook for the welfare of the patient. The majority of all cases of amebic dysentery should be treated by rest, diet, colonic irrigations, and injections of some harmless substance for the destruction of the amebæ. In a moderate per cent of the early cases the cure will be complete—*i. e.*, the amebæ will be destroyed.

In the cases in which we can expect the best and safest results from appendicostomy we have every reason to expect just as good results from the paliative methods.

The advising of appendicostomy with the expectation of a radical cure, the complete riddance of the amebæ, is not justifiable.

In cases coming into our hands that are so severe that paliative methods give no relief, and it is apparent that death is the immediate end, appendicostomy should be done.

In undertaking appendicostomy under these circumstances we must appreciate the fact that our mortality will be high, but the per cent of prolonged life will at the least justify the operation, though the recurrence of the dysentery in a large number of the recoveries must be expected.

These conclusions on appendicostomy are equally applicable to dysentery from any other cause.

DISCUSSION ON THE PAPER OF DR. BATES.

DR. ROBERT CALDWELL, of Nashville:

It is with a great deal of hesitation that I rise to discuss a paper by a man who has made such extensive observations on a disease like amebic dysentery as Dr. Bates has, and the limited observation that in this climate we are forced to have. He has given us a very excellent paper, outlining the pathology especially very clearly and concisely. But his conclusions, it seems to me, are not justifiable from his premises. Infection not only occurs in the lower bowel, the rectum, and sigmoid, but it often extends on through the larger bowel the cecum, and extends up into the smaller bowel, wandering into the various tissues of the body. With that before us, with the infection so widespread from these amebae, how can we treat this disease by rectal irrigation?

Some cases of amebic dysentery are mild; some of them get well practically without any treatment; some, on the other hand, are more malignant from the outset; consequently we must treat amebic dysentery as we would other diseases—that is, treat the cases individually. In a case of amebic dysentery, where the infection is localized in the rectum and sigmoid, the correction of the pathology in that locality relieves the patient of his symptoms and cures the patient. If that is the case, then why do an appendicostomy? Or why give any other treatment than that which is generally included with the local treatment? But if the infection involves the sigmoid and rectum, also the cecum, then we can apply the rules Dr. Bates has laid down for us. Can we apply the local irrigation? Some will argue that we can; that we can carry fluids by the rectum on into the small bowel through the ileo-cecal valve very readily. But that is a matter of opinion, and possibly there is a difference of opinion regarding that point. But granting that we can irrigate the cecum by rectal irrigation, we cannot do it successfully. We must admit that it is imperfectly done at best.

The doctor, in speaking of appendicostomy, applied the same argument against it in the treatment of some of these cases just as many practitioners and the laity apply against operative treatment in cases now that we accept as belonging to the operative class—for instance, the common operation of appendicitis. What was the position years ago with regard to appendicitis? They waited until the patient was nearly dead, then they resorted to operation. The result was we had a high mortality. Just

as the doctor mentioned in connection with his cases, after they had done everything else, as a last resort they subjected the patients to appendicostomy, with a mortality of fifty per cent; consequently that is unfair, so far as appendicostomy is concerned, to wait until the patient is nearly dead and then do an appendicostomy. In cases in which we suspect a general infection, of which our patient gives every evidence, and we get no results from treatment of the lower bowel, and there is evidence of infection of the large bowel, we should do appendicostomy. We should not wait today until the patient is moribund before doing an appendicostomy, but operate more promptly. When we find local treatment will do no good, then the mortality from appendicostomy will be practically *nil*.

DR. FENTON B. TURCK, Chicago:

The essayist has given us an admirable clinical resume of amebic dysentery; but, I take it we are also interested in the etiology and therapeutics of the disease.

From recent experiments on amebic infections, it is probable that amebae are laden with bacteria, which may be responsible for ulceration and even perforation. In the *Journal of Medical Research*, February, 1908, is a report of experiments with bacteria-free amebae, which appear to be less effective in producing pathologic conditions than are those containing germs. In either case it is necessary to destroy the amebae, and all the more if they are germ-carriers.

If we use local treatment in these infections, it is impossible to reach the depth of the tissues by ordinary chemical agents. Volatile substances, such as oil of cloves, oil of cinnamon, menthol and weak formalin solutions are beneficial, but the greatest results are obtained from injections of hot and cold water. A colonic lavage with water at 55° C, followed by injection of ice water, does not result in shock as it would if cold water were used alone. The extreme hot and cold kills the ameba, and hot water stimulates the patient. Antibodies are increased, the patient giving greater resistance to micro-organisms.

The remarkable results which I have had in treating cases of amebic infection I attribute to the sudden change of the lavage water from very high to low temperature, resulting in death of the ameba.

DR. A. B. COOKE, of Nashville:

I want to address a few remarks to certain special phases of the subject. I agree with Dr. Caldwell that Dr. Bates' conclusions are rad-

ically wrong. It is somewhat a matter of conceit, perhaps, for any man, who has had a limited experience in the handling of this disease, to take issue with one who has had the extensive experience that Dr. Bates reports having had in the Canal Zone; yet I am forced to draw the conclusion from my own observations that the people in the Canal Zone by reason of the high temperature and the lack of resistance on the part of their tissues are more susceptible to the inroads of this disease, or else they have a different type of organism down there, or for some reason they do not respond to the treatment such as we are able to give in this temperate part of our country.

The series of cases of appendicostomy reported by Dr. Bates is certainly the most remarkable I have ever heard on this subject. He reports a series of twelve appendicostomies, with an operative mortality of fifty per cent, and a recurrence of fifty per cent in those who survived. Those who have done any considerable number of appendicostomies in other portions of the United States, eliminating for the moment the results attained in the Canal Zone, have an operative mortality of zero from the operation of appendicostomy. I do not think that in my talk with various men who have done this operation many times I have ever known one to report a single death from the operation, and those of us who are familiar with abdominal surgery, who know how simple an appendicostomy is, must come to the conclusion that the reason patients die is because of the fact called to our attention by Dr. Caldwell—namely, they are reserved for an operation until they are practically dead. Now, in a case of that kind, I believe it is bad practice to operate; it brings the science of medicine and surgery into disrepute to operate at all, at such times and under such circumstances.

I heartily agree with the statement made by Dr. Caldwell that it is practically impossible to get germicidal solutions of whatever kind by the rectal route in sufficient concentration into the cecum to effect the destruction of these organisms, for the reason that a germicidal solution which is sufficiently strong to destroy the amebae immediately, when brought in contact with them is, at the same time, sufficiently strong to excite peristalsis and cause it to be thrown off from the sigmoid and rectum. It is true, that by the use of a recurrent sigmoidal or colon tube introduced high up, water or boric acid solution or some simple germicide can be coaxed around to the cecum in many cases, but these solutions are not

sufficiently germicidal in their properties to effect the destruction of the organisms.

I would not be one to take the position that as soon as a case was diagnosed as one of amebic dysentery, an appendicostomy should be suggested or advised. On the contrary, the case should receive careful, thorough local treatment by the rectum, along with the dietetic regimen pointed out so well by Dr. Bates, for the reason that we are unable to tell by actual inspection just what portion of the bowel is involved in the ulcerative process. We are only able by means of our best modern methods of examination to look into the sigmoid flexure, and not all the way through that. If we could look through an instrument and get beyond the area of ulceration, then we would have reasonable hope that the ulceration is limited to the part below it. Such a case would be as easily accessible to topical applications and treatment of other kinds as any area on the surface of the body. In such cases it would be inadvisable to undertake appendicostomy; but in cases in which one is in doubt and it is impossible to determine where the infected area extends, I still believe that we should give the patient the benefit of the doubt and submit him to the proper line of treatment by rectal irrigation along with dietetic treatment which, in all of these cases, will result in my experience in a rapid and marked amelioration of the symptoms. Tenesmus, which is a part of the disease in these cases, is an expression of irritation in the rectum, in the lower part of the bowel. A patient does not have tenesmus because the colon is ulcerated, but because the rectum is ulcerated, and a course of treatment which will cure irritation and ulcerated patches of the rectum will result in amelioration of this symptom. If the patient should have a recurrence in a few months, advise the same line of treatment. If a patient presents himself with repeated recurrences, in the interest of the patient, with a knowledge that these organisms may invade other remote regions of the body, liver and brain, etc., we owe it to the patient to advise that appendicostomy be done.

One reason, above others, why appendicostomy has fallen somewhat into disrepute is this: that the tendency has been to allow the operative wound to close too soon. In talking with Dr. Tuttle only a few days ago, he said it was his rule to say to the patient before appendicostomy was performed, that he would not under any circumstances consent to the closure of the operative wound in less than one year, and he had had the experience several times, a year and

a year and a half after operation, of having the patient say he would not allow it to be closed for a million dollars, because of the relief obtained from it.

I have had a limited experience with appendicostomy. I have done it under circumstances where there was a reasonable chance for the operation to be a success, and so far my results have been all that I could wish, expect, or desire. The last patient upon whom I performed this operation was in bed in the hospital only six or eight days, at the end of which time he was up and about, began to take on flesh at the rate of one pound and a quarter a day, and at the end of three weeks had gained twenty pounds, leaving the hospital at that time. He irrigates himself through the appendicostomy wound, and does not want that hole in his side closed up. It gives him no inconvenience, and his comfort is so great that he has become attached to it.

DR. RICHARD A. BARR, of Nashville:

I rise to extend the right hand of fellowship to Dr. Bates, as it is not often that I get an opportunity to agree fully with a general practitioner regarding a condition that is more or less surgical in its nature, or has been considered so, and also to point out a little pit which Dr. Cooke nicely dug for himself and jumped into. He referred to the fact that his own patient preferred to keep the appendicostomy wound open on account of the comfort it gave him. In my judgment, that is pretty positive proof that the appendicostomy did not cure the patient. A man in a normal condition does not want the appendicostomy wound open.

So far as the question of convenience in irrigation is concerned, I will grant you that appendicostomy may in many cases do good; it may be of great relief to the patient, but to speak of appendicostomy as a method of treatment of dysentery is an absurdity. Appendicostomy is no treatment in itself. It is simply an opening for treatment, and that is all.

I do not think I ever saw a report of cases stated more fairly and with more justice to surgery than those cases reported by Dr. Bates. He admitted, to begin with, that the condition of the patients was desperate; that the mortality could not be urged against the operation, and six cases died. He eliminated those, and considered only the cases that got well, so far as operation is concerned. Appendicostomy is simpler than appendectomy, and there is nothing simpler than that unless it be the trimming of one's fingernails or toenails. Of the six cases that recovered from the operation, he lost sight

of three of them, and the other three had recurrences. The only conclusion Dr. Bates drew from this was the extreme seriousness of amebic dysentery, the futility of any kind of treatment in a great many of the cases, and in fact appendicostomy does not offer a specially new treatment for this disease. He is exactly correct. Why should we have repeated cures without appendicostomy? That means that all ulceration has, at last, healed. If we can cure ulceration without appendicostomy, can we expect to do more with appendicostomy? From Dr. Cooke's position, that these patients prefer to keep the appendicostomy wound open to the very latest, I think we can draw the conclusion as well as from the cases Dr. Bates reports, and from the general reports of cases, that appendicostomy offers very little indeed in amebic dysentery. In fact, it offers nothing except an opportunity for irrigation in some cases, in which we find it difficult to conduct satisfactory irrigation by the rectal route.

So far as the tendency on the part of the bowel to expel strong antiseptic solutions is concerned, I think an antiseptic strong enough to cause that tendency on the part of the bowel would be doubtfully indicated even through the appendicostomy wound. I would not care to use an antiseptic so irritating as that through the appendicostomy wound. I would not care, in fact, to use very strong irrigating injections into the bowel through any route. The experiments alluded to by Dr. Turek prove that we can irrigate the whole length of the large intestine, and he has been enabled to raise the temperature over the cecum by colonic irrigation. If we find we cannot satisfactorily irrigate the bowel by the rectum, then I think appendicostomy is indicated or the formation of an artificial anus, not only for affording an opportunity to irrigate the bowel, but to relieve the whole length of the large intestine of irritation of the fecal contents, making an artificial anus, cutting out the length of the large intestine from the fecal current, and using irrigation through the same wound. That type of operation, where it is found impossible to institute satisfactory treatment by the rectum, is indicated. But there is nothing specially to be offered by appendicostomy, so far as a cure of the condition is concerned.

DR. J. A. WITHERSPOON, of Nashville:

This is a subject I am very much interested in, and I think all practitioners in this section of the country should be. I was very glad to hear what Dr. Bates had to say, for the reason that he has had a great deal of experience in

this work, and he mentioned the fact that this disease is widespread in our own section. I believe that if we, as general practitioners, would examine the fecal discharges or the mucus from all cases of chronic diarrhea, where any blood is seen in the stools at all, we will find a very large percentage of them belong to this type of dysentery. I have been struck with that in the last few years very much indeed. Why it has increased in this country I do not know, other than that we are in communication with the tropics now more than we have been heretofore.

In regard to the treatment of this disease, I feel that, in the first place, the majority of cases can be treated practically as well by irrigation in the old-fashioned way as by an appendicostomy. We have no assurance, if appendicostomy is done, that the patient will not have the same relapse as he did by the old method.

I do not agree with Dr. Cooke, that we cannot use the antiseptic treatment for this disease without sources of irritation high up in the bowel. We do not use the ordinary irritating type of antiseptic. We can use one to five thousand, or one to ten thousand, or one to three of quinine solution, with enough sulphuric acid to dissolve it, without any trouble whatever, and without any increase of peristalsis other than the natural effect from the irrigation. I know by experience that it is perfectly feasible to irrigate the entire colon by the rectal method. I know, furthermore, that the same improvement which follows appendicostomy, if properly done, the same irrigation by the rectum, will give the same results, possibly not quite so rapidly, because it is a slower method, than those obtained by appendicostomy.

Conceding the fact that the trouble is liable to recur, we know the well-known tendency of the amebae to burrow in the submucosa. We know that after we have irrigated the whole colonic region, we have not reached the germs that bring about the trouble. You cannot reach them by the quinine solution. I have been practicing the exact method suggested by Dr. Turck, using hot water and cold water. I believe the ameba is perfectly immune to the treatment of heat and cold. I have had more experience with ice water than with hot, although I use hot irrigations where the case is at all intractable.

I have been very much impressed with the value of ipecac in proper doses by the mouth in this disease. I am well aware that in the bacillary form of dysentery, we expect so much from the use of ipecac, yet in a case in which the gentleman is present now, I from the start kept up

doses of ipecac, guarding them, it is true, and that man, in the course of a few weeks, using nothing but quinine irrigations, has gained some twelve or fifteen pounds. I do not say the man is well. He may have a return, but at present his bowel shows no further ulceration, and the urine no further amebae. No amebae can be found in the discharges. I usually begin the use of my ice water and try to kill out or destroy the embedded amebae that exist latently there and would bring about a return of this gentleman's trouble. It is liable to return after this mode of treatment, but it is just as liable to recur where appendicostomy is done. Now, then, if this is true, gentlemen, and I confidently believe every word of it, and I speak from experience, I can see no reason or special argument why a man should be adorned by having a hole in his belly. I do not see any reason why any man should be proud of having such a hole in his belly. Those I have seen have tried hard to keep from having a hole put in their bellies.

DR. ROBERT CALDWELL, of Nashville:

I want to say a word or two in defense of Dr. Cooke, who was called to the telephone, and did not hear what Dr. Barr said. Dr. Cooke referred to the fact that Tuttle spoke of patients who did not care to have their appendicostomy opening closed, and in reply to this Dr. Barr said that the mere fact that they did not want the opening closed was proof that they were not normal. Now, I want to ask Dr. Barr if he ever saw one of those violent cases of cystitis that would not respond to anything on earth except vesico-vaginal fistula, this affording the patient such relief as she has not had for a long time, and she will say that "I feel pretty good, and I will not have it closed up just now?" I do not think he would say that such a patient was not normal, and yet he says a patient who does not want the appendicostomy opening closed is not normal.

DR. RICHARD A. BARR, of Nashville:

I have never had a patient in my professional life who did not want an artificial opening closed as soon as possible. In amebic dysentery I would want to keep the appendicostomy wound open in order to keep up treatment; otherwise, not. That is my individual experience.

DR. A. B. COOKE, of Nashville:

I think from what I heard of Dr. Barr's remarks and those of Dr. Witherspoon, I have been misunderstood in regard to the treatment of amebic dysentery. I tried to make it clear that I do not recommend appendicostomy for

amebic dysentery, unless the disease fails to respond to the treatment outlined by Dr. Bates, rectal irrigation and dietetic treatment; but if it continues to recur from time to time, knowing that the amebae infected colon is a constant menace both to the health and life of the patient, he is entitled to have some definite means of cure offered to him. It would appear from the remarks that have been made that appendicostomy is not a cure for amebic dysentery. It is not when the patient upon whom the operation is performed is moribund, because the disease has gone too far. But the records of those who have performed the operation at the time of election, when the patient was in good health, show that it is a definite, positive, curative procedure.

I am sorry that Dr. Barr has left the hall. He made one statement which I want to refer to here—namely, that if left to him he would very much prefer to do a right-sided colostomy and divert the whole fecal current from the entire large bowel. He probably made that remark without thinking of what he was saying. We know that that is one of the most dangerous things that can be done. While the operation does not kill the patient, malnutrition does when a right-sided colostomy is performed. I cannot understand why he prefers an operation that is very dangerous to the one of appendicostomy from which a fatality has never been known to occur, if the operation is done at the proper time and under proper conditions. Appendicostomy is not to be performed on every patient who has amebae in his discharges, or from which amebae can be obtained by scrapings from the ulcers, and that is the best way to get pathological specimens for examination. But if a patient continues to have a recurrence of amebic dysentery, then we owe it to that patient to give him a chance of a radical cure of the disease, and the only complete and radical cure that has yet been devised and reported, and that can be depended on, is that of appendicostomy. If an operation is to be done, it should not be in the nature of a false anus in the cecum or in the ascending colon, which is dangerous, but it should be an appendicostomy, or a cecostomy, after the valvular method of operation devised by Gibson, in which the fecal current is not diverted, the valvular opening serving no other function than the appendicostomy wound does.

DR. BATES (closing the discussion):

I have been misunderstood by some of the speakers in one or two respects regarding what I said about appendicostomy as not being justifiable. I pointed out that the advising of appen-

dicostomy, with the expectation of effecting a radical cure and getting rid of the amebae from the intestinal tract, was not justifiable. Our experience has shown that the amebae will return in spite of the fact that these patients are treated by irrigations through the appendix or through the cecum as Dr. Barr said he preferred. I stated that in cases coming into our hands so severe that palliative methods offer no relief, then appendicostomy is justifiable. Fifty per cent of them will have their lives prolonged, and in some of this fifty per cent the amebic dysentery will not return. But when any of you advise appendicostomy, the only thing I ask you to do is to state to your patient that there may be a recurrence of the disease.

Dr. Turck and Dr. Witherspoon spoke of the use of hot and cold water and its effect on the amebae. I have no doubt it is good treatment, and I have no doubt, further, that they got good results from its use. I have never tried it further than to use ordinary heat in high colonic irrigations.

One word about amebae with reference to heat and cold. Amebae, when subjected to heat or cold, either one, and it does not take a very great degree, will cease motion at once. Five or six little vacuoles form in the body near the periphery of the amebae, and as soon as they cease motion they contract. This is known as the encysted form. Here we have an effort at prolongation of the life of the amebae. I do not know what degree of heat or cold the amebae can stand. Dr. Darling took the dust from the street drains in front of our laboratory, in which the encysted forms were present (the dust drying in the tropical sun four months), and by adding moisture these encysted bodies broke up into separate bodies forming young and active amebae. This same process will no doubt take place in the intestine after motility is checked by hot or cold water.

Dr. Turck is quite correct about not being able to exclude bacteria from the amebae. In pure culture media amebae will not grow; but as soon as the media is infected with colon bacilli or ordinary bacilli, the amebae will grow.

DR. RICHARD A. BARR, of Nashville:

I rise to a question of personal privilege after what has been said. As to the danger of cecostomy, either from the primary operation or from malnutrition following it, I do not hesitate to say that a cecostomy can be done with as little risk as appendicostomy. If you are afraid to open the large bowel, you can fix it in the wound, and the peritoneum will be protected by adhe-

sions; then you can make an opening in the bowel, although I would not be afraid to make it primarily. I am not afraid of losing bowel contents after it has passed the ileocecal valve. The nutritional portion is absorbed in the small intestine and absorption from the large intestine is of very little value to the patient in general. There is only a slight additional risk from a cecostomy over an appendicostomy.

DR. A. B. COOKE, of Nashville:

Dr. Barr shifts his ground in his reply. He said in the beginning that he believed cecostomy would be far better, diverting the whole fecal current, and referred in this connection to artificial anus.

DR. BARR: I grant the diversion of the fecal current, but has it any nutritional value?

DR. COOKE: It certainly has nutritional value. But such an operation is an exceedingly unfortunate thing to do for any patient, for the additional reason that when the fecal current leaves the small bowel and passes the ileocecal valve, it is in a fluid condition, and it is absolutely impossible, with an artificial anus on the right side, at any part of the cecum or ascending colon, to avoid constant excoriation and infection of the contiguous parts. If Dr. Barr can show a single reputable authority for his statement that there is no nutritional value in the contents of the bowel after it passes the ileocecal valve, I will yield. The truth is, there is overwhelming authority behind the assertion that patients who have a right-sided artificial anus in any part of the right colon are very apt to die of exhaustion or malnutrition, or the two combined.

MEMBRANOUS CROUP.

G. E. VAUGHAN, M. D., CLARKSVILLE.



THE name, membranous croup, is misleading from the fact that it fails to indicate the true character of disease, and has no reference to its cause which is generally admitted to be the diphtheretic germ, Klebs-Loeffler bacillus—simply diphtheria, or to be more specific, diphtheretic laryngitis would be a more appropriate name. In most modern text-books it is usually thus termed, but the profession still adheres to name “Membranous Croup.” It is true that in some instances a membrane is formed by inflammation due to other germs as streptococcus, xerosis bacillus, etc., but such cases are rare, comparatively, and bacteriological examinations usually reveal Klebs-Loeffler bacillus. From investigation of this subject I am inclined to believe this disease is frequently confused with the more severe cases of acute catarrhal laryngitis, and fortunately so, for it is better to err on the side of giving diphtheretic antitoxin to a catarrhal case than to fail to give antitoxin to a diphtheretic case. On this account most of the severe

cases of laryngitis in children are termed membranous, and catarrhal laryngitis is discounted, being placed in class with acute rhinitis, and considered harmless. It is generally stated by most writers on this subject that in membranous croup a membrane of some description is present, and this is undoubtedly true; yet the impression conveyed that a distinct, well-defined membrane is present I do not believe to be true. Whereas, microscopically, the exudate may be fibrinous, and be called a membrane by pathologists; but in most cases it resembles a thick tenacious mucous secretion. Either this is true, or membranous croup is an exceedingly rare disease. According to statements of many physicians in this country, the disease is not uncommon, and is successfully treated by diphtheretic antitoxin, and no membrane is seen. The questions now present themselves: What is cause of dyspnoea, and what becomes of membrane, or is any membrane present? Pathologists tell us that in diphtheria the inflammation may be of varying degrees—from a simple red-

ness or catarrhal inflammation to the formation of extensive membrane—necrosis and ulceration. There are three views to be taken: (1) Obstruction to respiration may be caused by formation of membrane; (2) by swelling and redness of vocal cords and tissues of larynx with exudation; (3) by nervous reflex irritation and spasm of muscles of larynx. In adult we know by laryngoscopic examination that loss of voice in acute catarrhal laryngitis is due to swelling and redness of vocal cords, but in children, as we cannot make this examination satisfactorily, we reason that the loss of voice and dyspnoea in acute laryngitis or false croup is due more to spasm in mild cases from fact that trouble is almost entirely cleared up in a few hours, or at any rate by next morning. In diphtheretic laryngitis or membranous croup I am inclined to believe in the early stage all three of above-stated factors are present, but as disease progresses the spasm element is eliminated, and obstruction is then due more to swelling of tissues and formation of membrane and exudate of secretion.

As in most diseases it is important to make diagnosis early, but particularly in membranous croup, as administration of antitoxin to be most effective should be given early—within first forty-eight (48) hours; large doses, 4,000 to 5,000 units. (Will not attempt any hair-splitting differentiation in this paper, as I presume all here are familiar with the different symptoms, and will only urge that when there is any doubt as to diagnosis, give plenty of antitoxin diphtheretic.) If dyspnoea continues, then intube child or open trachea; follow these methods, and membranous croup will be robbed of its mortality to a great extent. The cases which I intubed were of the ordinary type—had been sick four to six days, with intervals of apparent improvement; but each attack of dyspnoea more intense and of longer

duration until attack developed in which I saw them. Attack had been on about four or five hours, and increasing dyspnoea, cyanosis, bulging eyes, dilated pupil, and beginning coma. Tube was introduced; remained three days, and removed without any unpleasant symptom—except hoarseness which persisted for about two weeks; no antitoxin was given these cases except the last, but this was only about one hour before I saw patient. No membrane was ever seen in throat or coughed up, only a tenacious mucous secretion.

Except for the fact that men with extensive experience with children state that only very rarely is it necessary to intubate in acute catarrhal laryngitis, also from fact that membranous croup yields so readily to antitoxin, I would be constrained to believe that cases reported were acute catarrhal laryngitis, but for these reasons and others stated in paper am compelled to believe they were cases of laryngeal diphtheria, or membranous croup.

DISCUSSION ON PAPER OF DR. VAUGHAN.

DR. J. D. HOPPER, of Jackson:

Mr. President—I rise to discuss Dr. Vaughan's paper from one standpoint. He brought out the fact that we often have membranous croup without the membrane. I want to bear out his statement. Not very many months ago I had a little patient, three years of age, who had, in my judgment, membranous croup, which was not relieved by the ordinary croup remedies, and after inspecting the child's throat several times I was not able to discover any membrane. But the other symptoms led me to believe the child had membranous croup. Accordingly, I used six thousand units of antitoxin, which afforded some relief. Forty-eight hours afterward I gave the child five thousand units of antitoxin, making eleven thousand units, and in about five days after I began treatment with antitoxin, the child began to breathe more easily. After the antitoxin had been given three days, the little child began to cough incessantly, but being in the country about five miles from the patient, I could only see him once a day. He coughed so incessantly that the mother had to send for something

to relieve the cough. During the coughing he must have coughed up the membrane. The child got well without intubation. I do not see any reason for intubating unless the throat muscles are closed. I equipped myself with intubation instruments for the purpose of relieving children that were choking, but since we have become convinced of the value of antitoxin in membranous croup, we have no use for our intubating instruments and tubes. As a country physician and as a man who believes in the value of antitoxin treatment, I believe we should institute antitoxin in cases of membranous croup without a membrane which can be seen by the eye, and if this is done, I believe our intubating tubes and instruments will soon become relics of the past.

DR. W. M. McCABE, of Nashville:

Dr. Vaughan has given us a very interesting paper, and I firmly believe we have membranous croup which is non-diphtheritic and which is a distinct disease in itself. Membranous croup that is non-diphtheritic is not contagious, for the reason that the bacillus of diphtheria is not present. The glandular involvement of the neck is more perceptible. The membrane does not embed itself into the mucous membrane—that is, it does not replace the mucous membrane, but seems to form upon it and by pulling it off a red ulcerated surface is not left, as in pulling off the membrane in a case of diphtheritic croup.

With reference to the administration of antitoxin, I will say that in one case I gave fifteen thousand units every other day for two weeks, a total of a hundred and fifteen thousand units of antitoxin having been given. In another case sixty thousand units of antitoxin was given, and in still another eighty thousand. I recall one case in which I gave twenty-four thousand units in one day. If we are in doubt as to whether or not the case is diphtheric or nondiphtheritic I believe antitoxin should be administered. From this report it seems that the administration of antitoxin in all these cases in large amounts was harmless. In asthmatic cases, however, antidiphtheritic toxin is dangerous and may produce pulmonary congestion, and in those cases I believe it is better to delay administering antitoxin.

DR. S. T. HARDISON, of Lewisburg:

We used to have many cases of false croup and true croup, and true croup or membranous croup. Now, practically, we have merged them into diphtheritic laryngitis. We begin to use our diphtheritic antitoxins in all cases of croup; still we learn from the essayist and one of the

gentlemen who discussed the paper that we have membranous croup without the formation of a membrane. That is a little anomalous to me, and I doubt it very much. The practical thing I want to know is this: If we have a disease that is not spasmodic croup, not diphtheritic laryngitis, then we have membranous croup or true croup. If we have true croup, we have a very active inflammation, and we have, in a child apparently in good health and well nourished, a rapidly developing disease that often results in death, and I know of nothing in which a physician feels more helpless than in a case of true croup that is going on to death, in spite of antitoxin and of intubation.

I believe, gentlemen, when we get to a true statement about this matter, we will find that we have a disease which is independent of a diphtheritic deposit, and that when we have it, we must look for something besides diphtheritic antitoxin to cure it. I do not believe antitoxin does it.

I want to ask this body if any of the members have ever tried spirits of turpentine in true croup, or in diphtheritic laryngitis, as it is called by many. Have you ever tried dram doses of spirits of turpentine in such cases? If you have, I would like to know your experience. Several years ago it was announced through the medical journals that it was harmless in dram doses. I have given it in cases where diphtheritic antitoxin had failed, and patients have been relieved by it. The theory of its therapeutics is that turpentine being eliminated by the lungs has a very peculiar and very curative effect upon this inflammation, whatever it is, that is, in the trachea and larynx. I have seen this happen a sufficient number of times to convince me that there is good in it. It is a remedy that should receive further investigation.

A MEMBER: I have had the opportunity of treating a large number of cases of diphtheria and quite a number of cases of membranous croup. In those cases of membranous croup in which I have not been able to find the membrane, I am of the opinion it was diphtheria, from the fact, and from clinical observation, that I practiced medicine for three or four years without seeing any case of membranous croup. We had an epidemic of diphtheria in our community, and during that time I had three or four cases of membranous croup which presented the clinical symptoms that doctors call membranous croup. These cases were cured by antitoxin. Ever since that epidemic, I have, occasionally, had cases of diphtheria, and occasionally cases of

membranous croup. This observation, in connection with the disease, would seem to indicate that membranous croup is simply diphtheria, and it will certainly yield to antitoxin. I have cured patients who were apparently almost dead.

I disagree with the speaker who said that we do not need our intubation instruments since we now have antitoxin. I have had one case which contradicts that statement in my own child, who was taken sick about five o'clock, began to suffer from dyspnea, and I used every means to relieve her, if possible, and within a few hours she gradually became worse until she was almost dead, and I decided to use the intubation tube. I introduced the tube and the child got relief immediately. I believe that if I had not intubated, that child would never have breathed again. I performed intubation very quickly, resorted to artificial respiration, and within a few minutes she was breathing all right. I also administered antitoxin. I kept the intubation tube in eighteen hours, and the child recovered completely.

DR. F. J. RUNYON, of Clarksville:

I practiced medicine for many years before I saw a case of membranous croup, and during that time I never saw a death from croup. Finally, I had a number of cases of membranous croup. This was before the days of antitoxin, and in a number of those cases no membrane could be seen in the throat, so far as we could determine, and every one of those patients died without exception. I never saw a recovery in one of those cases where a diagnosis of membranous croup was made before we had antitoxin. In those cases that died, in which there was no membrane visible in the throat, in each case tracheotomy was done. The membrane was always there. Since we have had antitoxin, I have never seen a death from membranous croup where the antitoxin was given within three days from the time of onset of the disease.

In one case referred to by the doctor, in which antitoxin was given just before he was called, this patient I had seen, but the patient had been brought to me from a distance. I gave antitoxin as soon as I got to the house, and called the doctor at once to bring his intubation set, because I was afraid the child would die before the antitoxin would take effect.

I remember another case. A young friend of mine, a few years ago, called me one evening, saying he was uneasy about a child he had under observation. He had made a diagnosis of croup, but thought it was catarrhal in character. The child had been sick three days, and after asking

him several questions, I told him I was satisfied the case was one of membranous croup and to go back at once and give the child antitoxin. It was in the night. He said the family were not expecting him. He went, however, administered the antitoxin, and the next morning, while he was there, the child coughed up a membranous cast of the throat. I believe that practically all or the cases that we have of ordinary so-called croup requiring intubation are cases of membranous croup.

In regard to the point as to whether these cases are forms of diphtheria, it has long been a question with me. While the pathologists tell us they are one and the same, I have never had a second case of true membranous croup in the same family, or a case of membranous croup and diphtheria in the same family. I do not know why that is the case. I have had a number of cases of croup in one room—that is, little children playing all about the room, where it was not feasible to separate them, and no precaution was taken—and yet they did not develop membranous croup or diphtheria. I do not know why that is.

DR. J. N. RAWLES, of Dyersburg:

I have been very much interested in this paper and in the discussion. I have in mind now eleven cases which at the time I saw them we called membranous croup. It was before we began to use antitoxin. There were about eighteen cases in different neighborhoods at different times. An effort was made to prevent the neighboring children from visiting the house or houses in which these cases of membranous croup were. While we could not find the membrane, still we called it membranous croup. Of these eleven cases seen at periods covering fourteen years, every one of them died. They did not have the constitutional symptoms of diphtheria. In fact, there was no diphtheria in the neighborhood. There was just one case in a family, and one case in the neighborhood at the time, and sometimes there were two or three cases in a year. This went on for probably fourteen years, during which time we had these eleven cases, and it was before the advent of antitoxin. If, as some of the authorities claim, membranous croup and diphtheria are the same, we could not reconcile these cases. I have not had a case of what we call membranous croup since using antitoxin. I would have been glad if we could have used it in those cases. If it were diphtheria, then some twenty-five children would have been exposed who played in and around the house with this one case, and it is hardly possible that all of them would have

escaped infection. If it were diphtheria, there would have been infection in some of the other members of the family.

In the so-called cases of membranous croup I have treated what I call diphtheria. I could see the membrane. The patients had constitutional symptoms, such as fever, and they would cough up the membrane and the throat would bleed. In not a single case of these eleven cases was there any bleeding from the pharynx or fauces, and no membrane which we could see or find. I cannot see how we can have a case of true diphtheria or of true diphtheritic croup without there being infection in the other members of the family.

DR. C. A. ROBERTSON, of Nashville:

It is a difficult matter for me to keep my seat when I hear a discussion of the use of antitoxin in the treatment of diphtheria. I have gone through the transitional stage in the use of antitoxin in diphtheria, which is to some extent gratifying and at the same time somewhat embarrassing. The time was when I was put to considerable displeasure to report a number of sudden deaths after the use of antitoxin; and the time was when I was prejudiced against the use of antitoxin. The time was, also, when all the cases of laryngeal diphtheria I saw died, whether I gave them antitoxin or not. The time came, however, when I saw a change not only with reference to faucial diphtheria, but with regard to laryngeal diphtheria. While I have had a number of deaths, and sudden deaths, I have had a larger percentage of cures in the use of antitoxin in the faucial cases than in preantitoxic days.

I have had some little experience in the treatment of laryngeal diphtheria, and I regard it as true diphtheria, recognizing the fact that you can have a non-diphtheritic membranous condition of the larynx, but I doubt if I have seen any such cases. In the laryngeal cases I have seen I have given antitoxin freely and often. I have resorted in several instances to the use of the intubation tube, and I must say my personal experience with intubation has not been very gratifying. When O'Dwyer first devised his instrument, I made practically a special trip to New York, and did some cadaver work on babies for the purpose of becoming dextrous in the use of O'Dwyer's instruments. I thought I was quite an expert. Returning home, I found that to intubate a live baby was not quite so easy as to intubate a dead baby. I found also that to have the tube retained in position was not always a very easy matter; that not infrequently the

presence of the membrane and the inflammatory condition of the parts were such as to push the tube out as if by a spring. I have had in some cases the tubes remain in position very nicely unless by some accident they were dislodged by pulling upon the string or otherwise. But I found it difficult, unpleasant, and perhaps on the whole an unsatisfactory procedure as compared to tracheotomy. In recent years I have been resorting to tracheotomy in these cases, and while I have not tracheotomized a great number, I have tracheotomized a few, and I have always found a membrane. It usually protrudes from the opening just as you get an inrush of air.

One point in the treatment of these cases, aside from the full and free use of antitoxin, is not to defer operation of tracheotomy too long. The usual rule is to wait until there are signs of asphyxiation, until there is lividity of the face, until there is strong tendency toward a comatose condition, or until the system is thoroughly saturated not only with the diphtheritic toxins, but with carbon dioxide. In these cases we have waited too long, and in a recent case, a very malignant case of laryngeal diphtheria, I attribute my beautiful success to early operation before any marked signs of asphyxiation had developed further than an extremely labored breathing, and, of course, that was an indication that asphyxiation would soon come on. Having gone through this transition, and having lived at the time when there was a strong prejudice against the use of antitoxin, and having observed a number of cases of faucial and laryngeal diphtheria, I feel it a sense of duty to offer a word in commendation of the treatment by antitoxin in full and large doses, and I do not know how large the doses should be. It should be given for effect rather than the number of units, and also to say a word in favor of tracheotomy as against intubation.

DR. CHARLES P. McNABB, of Knoxville:

To my mind there is no doubt about the usefulness and necessity of antitoxin in the treatment of diphtheria, so that in my opinion it is not worth while to discuss that phase of the subject.

Like Dr. Robertson, I have been up against the proposition where antitoxin did not answer the purpose, and my experience has not been altogether satisfactory with intubation. Personally, in cases of dire necessity, I would rather have a sharp knife, and three or four good, clean wire hairpins, and a piece of rubber catheter, than any intubation set.

The reports of deaths from the injection of

antitoxin have been rather frequent of late, and several theories have been offered as a probable cause. One is the sensitizing of the patient to horse serum in some way. It has happened to me to have had three experiences with opiates in which practically the same effect was produced, as reported to have been produced by fatal doses of antitoxin, except that my patients did not die. I am inclined to believe that antitoxin has been blamed when it should not have been in the deaths attributed to it.

A good many years ago—perhaps twelve—I was called in consultation with an old physician in Knoxville to see an hysterical girl with intense pain from dysmenorrhea. He had given her one-quarter grain dose of morphine with no effect, and was arranging to give the second dose when I arrived, and did do so, but in two or three minutes the girl complained of intense pain and choking, and she looked as if she were dying. Her respiration was down to 6 or 7 to the minute. Her face was intensely swollen; she was as red as a beet, and intense urticaria came out all over her body; her hands and fingers were much swollen, and there was pouring from her mouth a continual stream of saliva. She went into collapse. Her temperature was far below normal, and her respirations were very slow. That is about the reports we have had of patients who die from the administration of diphtheria antitoxin. In this girl there was failure of respiration, and we gave half a grain of cocaine, that being the best respiratory stimulant at hand, and within an hour she completely recovered.

I saw a man suffering from gall-stones about three and a half years ago, and gave him half a grain of codeine hypodermically, and within half an hour I gave another half grain, and in two or three minutes after the last dose of codeine exactly the same symptoms occurred in his case as in the girl. Saliva poured from his mouth; there was intense congestion of the skin, slow respiration, low temperature, and signs of impending death came on at once. I gave that man cocaine; I did not know what better to do, as it is a physiological antidote for morphine. He was well in an hour, in so far as the alarming symptoms went; but of course, still had his original gall-stone impaction with him.

Last week I was called to see a patient hurriedly, whom I had treated for several months for malignant disease, and in order to make her comfortable, it was found necessary to put her on morphine in gradually increasing doses until she was given from a grain and a half to two

grains at a dose, and this was repeated every six or eight hours. Immediately after giving her the accustomed dose at this particular time, the same symptoms appeared in her case as had in the others, and she came near dying. Her symptoms were exactly the same as those patients who die from the injection of diphtheria antitoxin. There was no sensitization to horse serum in these cases. I do not know what it is that caused this trouble, and, hope some of you may be able to explain it, but there was a general vaso-motor disturbance of some kind brought on so quickly that the hypodermic injection could not have been absorbed in the ordinary way from the subcutaneous tissues before the symptoms appeared, and I have wondered if in all of these, including the antitoxin cases, the injected material had not been put into a vein and its direct and immediate effect been a vaso-motor storm, producing death in some cases, and approaching dangerously near it in the others.

DR. J. B. WITHERINGTON, of Munford:

I want to add my testimony in regard to the use of antitoxin in the treatment of diphtheria or membranous croup. I have passed through epidemics of this disease, gave antitoxin a great many times, and have never seen any bad effects from it, except a slight urticaria occasionally.

I do not rise, however, to speak of that especially; but quite recently I was called in consultation to see a case of membranous croup, which illustrates my opinion of the apparent difference between membranous croup and diphtheria. It was a very severe case, several specimens from throat were examined, and cultures made with negative results; no Klebs-Loeffler bacilli were found; apparently there was no diphtheria.

In this case tracheotomy was resorted to and the child's life saved. Within a week after the pathologist had announced that there were no diphtheria germs discoverable, two other cases of diphtheria occurred in the same family. Microscopic examinations revealed the presence of Klebs-Loeffler bacilli, showing that the first case must have been a case of diphtheria, notwithstanding the fact that the microscope failed to reveal the germ. It is my opinion that a very large majority of all cases of membranous croup are one and the same as diphtheria.

DR. C. C. SULLIVAN, of Nashville:

I wish to thank Dr. Vaughan for his paper, and, like Dr. McCabe and Dr. Robertson, I cannot resist the temptation to say a word or two on this subject of membranous croup. I practiced medicine for several years in the country, and

all the cases I saw of membranous croup or diphtheria died until I began the use of antitoxin. When I saw them soon enough I never lost a case when I gave antitoxin early.

So far as membranous croup is concerned, we have other symptoms besides the presence of the membrane, as, for instance, constitutional symptoms, and I think it is easy to tell the difference between false croup and membranous croup, or to distinguish between other symptoms besides seeing the membrane. I have had a number of cases of membranous croup where I was unable to see any membrane.

Another point is to differentiate between membranous croup and diphtheria. They are two separate and distinct diseases. Diphtheria is catching or is contagious, while membranous croup is not. In other words, I have never seen a single case of membranous croup that was contagious. Have had one case only in a family of two, three or four children.

With reference to tracheotomy and intubation, I have not had any practical experience with these operations except to call in another physician. I recall a case I saw a few months ago in the evening, about dark. I pronounced it one of membranous croup. The case did not seem to me to be very severe. I called again the next day at eleven o'clock, and as I saw the case was hopeless, and did not think I could do anything for it that would be of any benefit, I sent for a physician and surgeon, who came and performed tracheotomy, but the child died in a few minutes thereafter. He also told me that he had never performed the operation successfully: they all died. If I should attempt to do anything at all, I should not try tracheotomy under any circumstances, but intubation. I believe, if we diagnose our cases early enough and give antitoxin promptly, we will not have any need for either intubation or tracheotomy.

DR. W. S. DOTSON, of Gallatin:

While I believe that all cases of laryngeal diphtheria and membranous croup are practically the same, yet I think there are cases of membranous croup that are not laryngeal diphtheria. We have cases of membranous croup in which it is impossible for any bacteriologist to demonstrate the presence of the diphtheria germ or the Klebs-Loeffler bacillus. In these cases the administration of antitoxin would do no more good in curing membranous croup—that is, not diphtheritic—than to use vaccine virus to prevent measles. In all cases that seem suspicious, I never hesitate to use diphtheria antitoxin, giving the patient the benefit of the doubt,

while if we should be mistaken and it should not be diphtheritic, we have been simply out the matter of expense for the antitoxin, which is cheaper than collins.

In reference to intubation and tracheotomy, I cannot agree with Dr. Robertson, that intubation is easier on the cadaver than on the living subject. I have found it very hard work to intube a stiff, but I do believe tracheotomy is easier and more successful than intubation in the living. Each practitioner of medicine should have an emergency tracheotomy set, and when parents withhold their decision in allowing you to perform a tracheotomy until the last minute, when you have no time to prepare for it, you can then do this bloodless, painless tracheotomy without a general anesthetic, and save the patient.

DR. N. DULANEY:

I have never seen more than one case of membranous croup. This patient was a little girl, about four years of age, who did not have the membrane, so far as I could determine. At the time she was so near death that I did not have a chance to give antitoxin. I believe if cases of membranous croup can be diagnosed early and antitoxin given promptly, many of them can be saved. It is a good rule to use apomorphia in the beginning, and if we have spasmodic croup to contend with, it will relieve these patients immediately. If they are not relieved, and the spasm continues for some time, there is no doubt we have to deal with membranous croup or diphtheria. In these cases where we do not find the membrane, the probability is, they are diphtheritic, and the toxins from the diphtheria bacilli may so infect the system that the disease localizes itself in the larynx and does not form a membrane. If antitoxin is given promptly, much of the trouble may be prevented. If we wait until we find the membrane, we wait too long to give antitoxin with any benefit. If we give an emetic, it will relieve them; give them an injection, and they will go to sleep immediately. We should try to get rid of the phlegm which has accumulated in the throat and stomach. I get much better results in that way than with anything else. If we try an emetic, and it does not relieve them, give them antitoxin; don't wait, and more of them will be saved.

DR. A. H. MOODY, of Dyersburg:

When we are confronted by a case in which throat is fast filling with a membrane, we should give large doses of antitoxin, whether it be membranous croup or diphtheritic laryngitis. The

question I would like to ask is this: When we have diphtheritic laryngitis, why is it not contagious as diphtheria of the fauces?

DR. WILLIAM LITTERER, of Nashville:

I might say, in the first place, that membranous croup is laryngeal diphtheria caused by the Klebs-Loeffler bacillus. Of course, in rare instances, one can conceive of some other infection, such as the streptococi, etc. In these conditions, where the Klebs-Loeffler bacilli are absent, the administration of diphtheric antitoxin does very little or no good. But in the majority of those cases, that are purely diphtheritic—that is, produced by the Klebs-Loeffler bacillus, antitoxin accomplishes wonderful results. The statement has been made upon this floor that by failing to find the bacillus diphtheriae that it would prove the absence of this germ. Such an assertion is certainly not tenable. It not infrequently takes several examinations to detect its presence, particularly in those cases in which the process is deeper than the larynx. This probably accounts for the less contagious nature than one ordinarily observes in pharyngeal diphtheria, for in practically every instance the Klebs-Loeffler bacilli can be recovered in this latter condition on the first examination. I have seen cases after death in laryngeal diphtheria in which the bronchi were filled with the membrane, and of course, intubation would not have been of much value in such cases. They are not as contagious as the other forms since the germs are generally situated quite deeply in the respiratory tract.

Dr. McCabe brought out the point of administering large doses of antitoxin, and reports several cases in which enormous doses were given. I can go him still better by referring to an instance in which enormous doses of antitoxin were given. The report comes from Dr. W. K. Sutherlin, of Shreveport, Louisiana. He gave to an adult female patient 498,000 units of antitoxin inside of eight weeks' time. The patient finally recovered from the diphtheria infection. This shows that the administration of antitoxin is absolutely harmless. We can take guinea pigs and inject enormous doses into them without producing fatal results. The urticaria, the rashes, and other unpleasant results, are not due to the antitoxin, but are the results of horse's serum.

McFarland has collected two million cases where antitoxin was given, with a report of death in five cases. The peculiar condition of dyspnoea and asthma, as a result of its administration, has been carefully studied by Vaughan, Rosenon, and Anderson. They believe it is due to the serum, and not to the antitoxin. They call attention to the fact that when ordinary egg albumen is injected into a rabbit or guinea pig and then wait for ten or fifteen days later and give another injection of egg albumen, that as a result of the latter injection the rabbit or guinea pig dies. This is spoken of as hypersensibility. The same thing happens with horse's serum without the antitoxin.

This being true, we should be very cautious in giving antitoxin a second time, especially after waiting more than ten or fifteen days, because bad results have been obtained as a result of its repeated administration.

DR. VAUGHAN (closing the discussion):

I wish to thank the members for their generous discussion, and to say that most of the points I would have replied to have been answered by the different speakers. There are only one or two that have not been answered.

Dr. Robertson spoke of the difficulty in doing intubation, and the bad results following it. He mentioned that the string attached to the tube got in the way. I use a string only when I introduce the tube, and when the tube is in the larynx I take the string out, because it interferes with the epiglottis closing properly and produces inflammation. After you are sure the tube is in the larynx, take the string out. O'Dwyer probably did not have good extractors in his time, such as we have now. We can easily remove the string, and I find no trouble in doing intubation. I would certainly rather resort to it than to tracheotomy, because naturally parents are opposed to an operation of any kind, but they will not object to your introducing a tube, as a rule. Most operators report uniformly good results from using the tube.

In regard to always finding the membrane in the larynx, I stated in my paper that diphtheria will sometimes only produce a mild redness of the membrane, with a mild catarrhal inflammation, and no visible membrane.

LEUKAEMIA.

R. J. M'FALL, M. D., CUMBERLAND CITY.

DEFINITION.



N affection which is characterized by persistent increase in the white blood corpuscles, associated with changes either together with or alone in the bone marrow, spleen, or lymphatic glands.

By Virchow and by Bennett, who gave it the name of leucocythaemia, this disease was described almost simultaneously. It usually occurs in two main types, though many combinations may be seen.

(1) Spleno-medullary leukaemia, the changes being especially localized in the bone marrow and the spleen, the blood showing an increase in elements derived from them, especially the bone marrow.

(2) Lymphatic leukaemia in which the changes are chiefly localized in the lymphatic apparatus, the blood showing elements derived chiefly from the lymph glands.

ETIOLOGY.

We are not at all positive, concerning the conditions under which it develops. It is rather common on this continent. Perhaps it is more common during the middle period of life, but it is seen at all extreme ages. Males are most prone to the disease, roughly speaking about two to one.

A tendency to repeated hemorrhages, especially nose bleeding, occurs in many cases. It will be more often noticed in females at the climacteric, and occasionally will be found during pregnancy. Malaria is by some believed to be an etiological factor, which I am inclined to believe from my personal knowledge with the disease. Leukaemia has followed an injury or a blow.

Some twelve months since a boy was

brought to me. He was about ten years old, rather small of his age, pale and nervous. He was complaining of his left side. Upon examination I found his temperature 102° F.; pulse 110; full, soft, and compressible; tongue heavily coated; considerable nausea; occasionally vomiting; slightly jaundiced; respiration somewhat hurried; moderately constipated; urine scanty and highly colored, and appetite rather poor. Upon palpation of the painful region I found an enormous enlargement of the spleen, reaching southward to one inch below the navel, and to the right even with the median line. It was rather dense, and very painful upon manipulation. No fluctuation; no yielding at any one point more than other.

The liver was slightly hyperaemic and tender. There were no enlarged lymphatic glands that I could detect externally. Upon questioning his father he gave the history of the lad having received a blow immediately over the spleen some two and a half months prior. I finally concluded that the trouble was an acute splenic abscess of traumatic origin, and possibly complicated with malaria. There had been no hemorrhages up to this time of any description.

I ordered a brisk mercurial, also quinine and ergot in very decided doses. An application of the biniodide of mercury was made over the affected organ. I instructed the father that if he was not better within seven days that I would suggest either splenotomy or splenectomy. After the lapse of five days, there being no sign of improvement, but upon the contrary an increase of the symptoms, and yet no sign of fluctuation, I insisted that an operation be done, hoping to be able to find some point within whereby fluctua-

tion would be revealed. Upon opening the abdomen the spleen was found to be loosely adhered to almost everything. I succeeded in palpating almost its entire circumference, but no dependent point could be detected. I then concluded to aspirate the spleen, which I did in several directions, very cautiously, but no trace of pus could be found. It was discovered at this time that the patient was not bearing the anaesthetic well at all, and being thereby forced to abandon the idea of both splenotomy and splnectomy, there was nothing to do save stitch up the wound and leave the patient to the inevitable. Strict search failed to reveal any enlargement of the cervical, axillary, or inguinal glands, yet the mesenteric glands were almost all enlarged and of a pearly white color. The wound being properly stitched and dressed, the lad finally rallied from the anaesthetic, and lived some eight hours, and died very suddenly, presumably from exhaustion due to hemorrhage.

After a general survey of the case, and the findings internally, I changed my opinion from splenic abscess to one of favor of a mixed type of leukaemia. I was indeed sorry that I did not have the blood examined to verify the diagnosis.

MORBID ANATOMY.

Extreme wasting may take place, occasionally dropsy polyaemia may be present, the heart and veins distended with blood clots. The blood at times clotted, and owing to the increase of leucocytes the coagula has a pus-like appearance with a peculiar greenish color. The alkalinity of the blood is diminished, while the fibrin is increased. The specific gravity is lowered.

In the spleno-medullary form the spleen is very greatly enlarged, and strong adhesions may bind the organ to the stomach, intestines, diaphragm, and abdominal

wall. The capsule may be thickened, and the weight of the spleen may range from one and a half to fifteen pounds. Chronic hyperplasia is the condition of the organ. It cuts with resistance, and has a reddish brown color throughout, the malpighian bodies being invisible. There may occur throughout the organ circumscribed grayish white lymphoid tumors. In the early stages the spleen pulp is not so dense, and rupture has been reported from the intense hyperaemia, possibly so in the case I have just reported. In this variety the bone marrow is involved, appearing as an extraordinary hyperplasia of the red marrow, and hyperplastic cellular tissue in regions where in the adults the marrow is fatty. In the long bones the marrow resembles the core of an abscess, or it may be dark brown in color. There may be localized swellings in the bones, the shell expanding and can be compressed with the hand.

In the lymphatic form there is general lymphatic enlargement, usually associated with some hyperplasia of the spleen. The cervical, axillary, and mesenteric glands are usually much enlarged, but often movable, soft, and isolated. They vary considerable during the course of the disease. The lymph follicles of the tongue, mouth, and pharynx may be enlarged, so, also, the tonsils. Leukaemic enlargement of the agminated and solitary glands of Peyer have been noted. Occasionally there are growths on the surface of the stomach, gastro-splenic omentum, and also enlargement of the thymus gland has been seen. In these cases lymphoid tissue may replace the bone marrow. The liver may be enlarged, due to leukaemic infiltration. Rarely are there any changes in the lungs. The kidneys are often enlarged, and pale. The skin may be involved. Leukaemic tumors in the organs are not common.

SYMPTOMS.

As a rule the disease is insidious in its onset, and it is for the enlargement of the abdomen, shortness of breath, enlarged glands, or the pallor, palpitation, and other symptoms of anaemia that the patient seeks advice. Occasionally the first symptoms are of a serious nature. Anaemia does not accompany all stages. Some subjects look healthy and well.

Leukaemia occurs in two main types, though combinations may be seen.

(1) The spleno-medullary form is the commonest. In the majority of cases the gradual enlargement of the spleen is the most prominent symptom. There may be pain and tenderness, but each may be so slight that they are hardly noticed. The size of the spleen varies very greatly. It may be notably large after meals. Free and persistent diarrhoea, or hemorrhage, may reduce its size. There may be distress after eating, due to pressure of the enlarged organ. The pulse is usually rapid, but full in volume, yet soft and compressible. Cardiac symptoms are rare, though the apex beat may be raised an interspace. Toward the close, owing to feeble circulation, there may be oedema of the feet, or even general anasarca. Hemorrhage, either early or late, usually occurs. Purpura may be extensive. The most common form of bleeding is epistaxis. Hematemesis and hemoptysis are rare. The gums often bleed. Leukaemic retinitis is a part of the hemorrhagic manifestations.

Intense infection, with high fever, the signs of local gangrene may occur. There are few pulmonary symptoms, the dyspnoea is, as a rule, due to anaemia. Late in the disease there may be pneumonitis, or oedema of the lungs. Gastro-intestinal symptoms are rarely absent. In some cases nausea and vomiting are the earliest features. There may be an extremely troublesome diarrhoea. While intestinal

hemorrhage is not common, the colon may be the seat of a dysenteric process. Jaundice rarely occurs. Ascites may be prominent, probably due to pressure of the enlarged spleen. There may be leukaemic peritonitis, due to new growths in the membranes. The nervous system is rarely involved, the dizziness, fainting spells, and headache are due to anaemia. Sudden coma may follow cerebral hemorrhage. The special senses are often involved. The peculiar retinitis described is chiefly due to extravasations of blood, but there may be aggregations of leucocytes forming small leukaemic growths. Optic neuritis is said to be rare. Deafness has been observed, and is probably due to hemorrhage.

There is no constant change in the urine. The uric acid excreted is always in excess, and probably stands in direct relation to the splenic tumor, or the abundant leucocytes. Priapism is rather a frequent symptom, and is occasionally the first symptom noticed. A majority of the cases have a slight fever, ranging from 101° F. to 103° F. The blood examination offers the most trustworthy mode for a diagnosis. The most striking change in the more common form, the lieno-myelogenous, is the increase in the colorless corpuscles. The ratio in leukaemia reaching one to five or one to one, or very rarely the leucocytes predominate. The most characteristic feature of the blood in this form of leukaemia is the presence of cells that do not belong or occur in normal blood. They appear to be derived from bone marrow, and are termed myelocytes.

(2) Lymphatic leukaemia. This form is rare. The superficial groups are most involved, but are not observed in such large clusters as in Hodgkin's disease. It is rare to see external lymph tumors. This type is generally more rapid in its course, and is more common in young subjects. The character of the blood differs to the other varieties. The ratio rarely

reaches one white to ten red corpuscles. This increase is solely in lymphocytes, while other forms of leucocytes are in decreased relative proportions. Eosinophiles and nucleated red corpuscles are rare, and myelocytes are not present. Pure myelogenous cases without splenic enlargement are rare. There may be extreme hyperplasia of bone marrow, without tenderness, and occasionally there is expansion of the flat bones, producing deformities and irregularities.

DIAGNOSIS.

It is hardly possible that a positive diagnosis of leukaemia can be made without the aid of the microscope. The clinical features may be identical, with those of Hodgkin's disease, or those of simple splenic anaemia. The question naturally arises, is the real increase in leucocytes the only true indication of the existence of the disease? I am inclined to think not, from the fact, that in some instances the ratio may appear, at first one to four, and later through appropriate remedies the ratio may be brought to normal, then could it be said that the case was one of leukaemia, when there was no increase of the leucocytes, still these cases will show numerous nucleated red corpuscles, as well as the characteristic myelocytes, elements which are very rarely found in normal blood. By Ehrlich's method leucocytosis can be readily distinguished from leukaemia, for in ordinary leucocytosis, the increase takes place solely in the polynuclear neutrophilic cells.

PROGNOSIS.

Occasionally recovery occurs, but in the great majority of the cases the patients succumb to the disease in two or three years. The unfavorable signs are frequent hemorrhages, persistent diarrhoea, high fever, and dropsy. Sometimes tran-

sient improvement may take place, for a few weeks or even months. The most malignant form seems to be that of the lymphatic variety, which may prove fatal in six weeks or two months. Yet there are instances where cases have lived ten or fifteen years, when there was no apparent anaemia, although the leucocytes were 240,000 per cubic millimeter, eighty or ninety per cent of which were lymphocytes.

TREATMENT.

Good nutritious diet, fresh air, and totally abstaining from mental worry, are essential indications. Of the medicinal remedies, perhaps arsenic is the best, given in large doses. If there is a history of malaria, quinine would be indicated, also iron and inhalations of oxygen may prove of service. Therapeutical measures often prove fallacious. Some patients, bed-ridden, emaciated in the extreme, and without any special treatment, gain enough strength to attend light duties.

Excision in some twenty-five cases one recovery, Franzolini. Fussell 105 cases of splenotomy, forty-eight deaths. Simple hypertrophy twenty-eight cases of excision, nine recovered. Sixteen cases of floating spleen, fifteen recovered, Osler.

DISCUSSION ON PAPER OF DR. M'FALL.

DR. BATTLE MALONE, of Memphis:

Mr. President—The essayist has covered the subject very well, and I have no desire to make any extended remarks on his paper. The first thing we should always do when we see a case of splenomegaly is to have a blood count made. Usually a blood count is all that is necessary to arrive at a diagnosis. I do not think a practitioner is ever justified under any circumstances in operating on a case of enlarged spleen unless he has the blood count before him. In cases of splenomedullary leukemia any operative procedure is absolutely contraindicated. The mortality rate from splenectomy for splenomedullary leukemia is about ninety-nine per cent, so that we should never for an instant resort to splenectomy in splenomyelogenous leukemia.

Some of the other types of enlarged spleen should be operated on, as, for instance, cases of malarial hypertrophy. There are many cases in my section of the country of enlarged spleen from malarial infection. These come to operation, and the recovery rate is good. Probably over eighty per cent of them recover from operative intervention.

DR. W. S. LAWRENCE, of Memphis:

I hardly think the discussion of this paper ought to pass without saying a little more in regard to treatment. There is only one treatment for splenomedullary leukemia that gives anything like results. The arsenic method gives some results, but there is nothing more brilliant in medicine than the results which can be obtained in splenomedullary leukemia from the use of the X-ray. I do not think quinine in malaria, or mercury and the iodides in syphilis, give more brilliant immediate results than the Roentgen ray treatment in leukemia. That, I think, is pretty well recognized, and it is certainly the one treatment that should be carried out before any other. I might mention a case of this kind to further impress the importance of this treatment.

A man was referred to me by Dr. Frank Jones, of Memphis, who was certainly at death's door, or so near there that Dr. Jones did not think he could go from the hospital to my office. He had been in bed for some time; his lungs were water-logged; his pulse was 120; respiration 40; his color that of an unripe lemon. He was in a desperate condition. Blood count was 350,000 leucocytes; 1,800,000 red cells, with differential count about as bad as it could be. That man was given X-ray treatment, and I have never seen any more brilliant result than was obtained in this case, although it was temporary. In three weeks his blood count was normal, with the exception that the differential count was never correct: the leucocytes had dropped to 12,000, and the red cells had been raised to four and a half million by daily exposures to the Roentgen ray. All of his symptoms disappeared; respiration and pulse returned to normal, and he remained in that condition for nearly a year. There was some tendency to relapse, when the treatment was discontinued. I gave him a rest for a month, then treated him for a month. In this way he was treated for eight months—one month off, and one month on. The man finally returned home, looking well, but he was not well. His differential count, as I have previously said, was never correct. There were also cells from the marrow, myelocytes, and the

disease was not cured. The man finally went home feeling well, looking well, and returned to light work. Later, he died suddenly, I think, from rupture of the spleen, before he could be reached by medical aid. Dr. Jones was called, and his opinion was that the man died from rupture of the spleen. This was nine or ten months after I began treatment.

Dr. Pancoast, of Philadelphia, has a record of over twenty cases treated by this method, and improvement is the rule, with hardly any exception. He has one patient, who was in a rather desperate condition, that has lived three years from the time of the beginning of treatment. This treatment is not curative in many cases, but it is certainly palliative, and does more than any other method, undoubtedly, for these patients.

DR. WILLIAM LITTERER, of Nashville:

Many theories have been advanced as to the true cause of leukemia, but it has not been found as yet. Prosser and White, of Pittsburg, after considerable research work, claim that they have found a spirochete as being the cause of leukemia. Their work has not been accepted. Spirochetes have been found in cases of cancer, and was once thought to be its etiological factor.

I want to dispel the idea of the use of the term splenomyelogenous leukemia. It is a misnomer. It should be myelogenous leukemia. The spleen is only secondarily involved; while the bone marrow is primarily affected. This has been conclusively proved by the researches of Ehrlich and others.

Dr. Malone is right in saying that there is no use in doing splenectomy in cases of myelogenous leukemia, for the simple reason that the disease is in the bone marrow and not in the spleen. The blood picture is sometimes very variable. There are cases in which the leucocytes may not go above 30,000 or 40,000. In these cases the differential leucocyte count will help us out. It is the myelocytes we look for, and not the number of white cells. Sometimes the white blood corpuscles will exceed four hundred thousand to the cubic millimeter.

Another important point with reference to the blood picture in the myelogenous form, is that there is scarcely any condition in which we will have more nucleated red blood cells, megakaryoblasts, poikilocytes, etc., not even excepting most cases of pernicious anemia.

I want to endorse what Dr. Lawrence has stated concerning the X-ray. I have seen several cases in which marvelous temporary results, although not curative, have been obtained.

I have in mind now one case seen by Drs. Douglas, Witherspoon and Wood, in which the result from three months' X-ray treatment succeeded in reducing the leucocytes from two hundred thousand to twenty thousand in number. The patient gained in hemoglobin, in weight, in strength, and in every other way. He was doing well the last time I saw him, which was last month. Whenever the treatment was let up for one week or more there would be an increase in the number of leucocytes. This man was first treated by Pancoast of Philadelphia. The X-ray offers the best chance of prolonging life, and it is better than any medicinal agents that we have.

Dr. J. HUGH CARTER, of Memphis:

I want to say that in leukemia of any form, the first essential point is the diagnosis. After the diagnosis is made, there are only one or two courses to pursue. As Dr. Malone has said, we cannot afford to operate upon any case without first having had made a blood count. It does not depend upon the increase in the leucocytes or myelocytes, but the ratio between the two.

As regards the X-ray treatment, I had the pleasure of seeing the case Dr. Lawrence referred to myself through the courtesy of Dr. Frank Jones. After the patient was sent to Dr. Lawrence and was treated by the X-ray, at first there was apparent a very great improvement in his condition in every way. But a little later the reverse came, and he went home and died, as has been said, from rupture of the spleen. This

man had other treatment than the X-ray. He had arsenic, iron, and some quinine, and I think we ought to give these patients the hygienic as well as X-ray treatment. I do not believe there is any surgical treatment suitable for this type of cases.

Dr. McFALL (closing the discussion):

I should not have attempted an operation in this case, if I had known it was one of leukemia to start with. I was under the impression it was a splenic abscess. After I had changed my mind I got out and sewed up the wound, because I preferred to take chances of the patient dying a little later than to die immediately after an attempt at removal of the spleen. The mortality rate from operations of this kind is high.

As to the use of the X-ray or Roentgen ray, I have not had any experience with it. I find there is as much evidence against it as for it. According to the mortality reports, patients die shortly after the use of the X-ray, which would lead one to think, who had not had any experience with the X-ray, that these cases are not very much benefited by it. It would also lead one to think that there was never a case of leukemia benefited before the X-ray came into prominence. But that is not true. I believe some cases have been relieved without the use of the X-ray in other ways, or through chemical agents, and life has been prolonged as much by the use of such agents as from the use of the X-ray. Anything that will prolong a patient's life is a good thing to use; but it is not a thorough success until it produces a cure.



Journal, Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Elghth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Elghth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

EXTRACTION OF CATARACT IN CAPSULE.

SINCE Major Smith began his great work in India, the operation of extracting the opaque lens in its capsule has attracted a great deal of attention. The operation was discussed in a paper by Dr. Graddy at the April meeting of our State Association. Dr. Savage, in speaking to the paper, said that the operation is an ideal one, but with present means and under the method now in use, it is attended by risk that only a few will be willing to assume. Two papers on the same subject—one by Greene and the other Wurdemann—were read in the section of ophthalmology of the A. M. A. at the last meeting. Greene's paper was illustrated by large drawings, showing the different stages of the operation. Every one was impressed that the operation could not become universal, because of the difficulties and dangers attending it, and only a few had attempted it. While the discussion was in progress, Savage thought he saw a way out of both the difficulties and the dangers, and at once drew on the margin of the program his ideal instrument. On Saturday (June 12) following, he had the instrument made in Philadelphia and exhibited it at

Wills Eye Hospital, also to numerous confreres in the city. The universal comment was: "It ought to do the work." On Monday, June 14, he tried the instrument, in his office, on one human eye recently enucleated, and on a dozen sheep's and pigs' eyes. In every instance the instrument dislodged the lens in its capsule, by tearing loose the ligamentous attachments, and delivered it as it was being withdrawn from the eye. In five of the animal eyes the point of the knife used for making the corneal incision, had cut the anterior capsule (the lens being transparent, it could not be seen), but, notwithstanding, these lenses were dislodged and delivered in their capsules.

The pattern, having proved its worth, has been returned to J. C. Ferguson, Philadelphia, that the perfected instrument may be made. The instrument at each end terminates in a double curve, the one in line with the handle and other at right angles to this line. The point of bending is the point of union of the two curves. The two curves are to have the same radius as has the anterior surface of the lens, and the curves are to be 5, 6 and 7 mm. long, for the reason that eyes vary

in size. The name will be the "*Cataract-in-Capsule Extractor*."

The new means described above makes necessary a new method of operating—new in essential particulars. The following is the method to be pursued: (a) Thorough preparation of patient, instruments, operator and assistant; (b) complete local anesthesia; (c) lids separated by a stop speculum, or the upper lid held up by the assistant, with a lid elevator, while the lower lid is pulled down by the other hand of the assistant; (d) the operator fixes the eyeball by grasping the tendon of the internus, then with the other hand he makes the corneal incision, associating with it a good conjunctival flap; (e) if an iridectomy is to be done, the one hand continues to fix the globe, while with his other hand the operator seizes the iris with iris forceps and gently draws it out through the incision just far enough to enable an assistant to make a vertical snip of the iris with iris scissors close to the tip of the forceps; (f) the iridectomy having been done—or if the iridectomy is not to be done—the operator, still continuing to fix the eye with his grasp of the tendon, takes in his other hand the cataract-in-capsule extractor and passing it into the anterior chamber, he directs the free point of the horizontal curve between the iris and anterior capsule, pressing it gently downward until both the horizontal and vertical curves are behind the iris, or between the iris and the cataract, and now the extractor is to be so held that the horizontal curve shall rest on the lens below, but parallel with the horizontal meridian of the lens, while the vertical curve shall rest on the lens to the outer side of, but parallel with, the vertical meridian of the lens. This is the primary position of the Extractor. On three movements of the Extractor de-

pends the success of the operation: (1) The vertical curve is made to press against the lens in such a way as to rotate it on its vertical axis, causing the outer margin of the cataract to move backward while the inner margin is made to advance to the same extent. The effect of this movement of the Extractor is to tear loose the ligaments laterally, the tear including much more than two quadrants, leaving untorn, probably, only a few fibers directly above and below. Now the instrument must be returned to the primary position, thus replacing the cataract in its normal position. (2) The horizontal curve of the Extractor must now be made to rotate the cataract on its transverse axis by advancing the free end of the instrument while making gentle pressure against the cataract below its center. The effect is to make the lower margin of the cataract recede while the upper margin advances accordingly. This motion tears loose the few remaining fibers of the ligament, above and below, making easy the next step. (3) The cataract in its capsule having been torn loose by the two movements of the Extractor outlined above, its delivery through the corneal incision is to be effected by continuing the pressure with the horizontal curve as the Extractor is being withdrawn from the eye. The cataract-in-capsule glides out beautifully before this combined force of backward pressure and lifting.

Before relieving his grasp of the tendon of the internus, the operator should replace any protruding iris with the point of union of the two curves of the Extractor; then he should replace the conjunctival flap over the corneal incision with either the vertical or horizontal curve of the Extractor. The operation is finished by removing first the fixation forceps, then the speculum or lid elevator.

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, MEETING, 1909.

ANOTHER great meeting of the A. M. A. has been held. For one or several reasons the attendance at this meeting was about six hundred short of that at the 1907 meeting, at the same place. It may be that we are meeting too frequently at this splendid seaside resort. Four of the last nine meetings have been held there. An indirect unfavorable result of these frequent meetings there may be the effect on the Passenger Associations covering other territories, some of which declined this year to give any rates. This was true as to the Southeastern Passenger Association. That this was a mistake on the part of the roads was made evident by the fact that from the whole of the Southeastern territory the attendance was only two hundred and twenty-five—about half the number that attended two years ago when the rate was one fare plus one dollar. The attendance from Tennessee was thirty.

Unusually good work was done in all of the sections. The next meeting will be held in St. Louis. The fact that this city is so nearly the geographical center of the United States should insure a very full attendance.

THE SOUTHERN MEDICAL ASSOCIATION.

THE general and section officers of this Association met in the Chalfonte Hotel, Atlantic City, during the meeting of the A. M. A., for conference. All reports were encouraging; prospects for a large meeting and one full of scientific interest are the brightest. New Orleans physicians are awake in the interest of the coming meeting and promise us a good time. The section officers are making good progress in program building. There should be an attendance, on that meeting, of at least one thousand, two hundred of whom

should be from Tennessee, and one of these should be you. Make all your arrangements to be in New Orleans November 9th, 10th and 11th.

COL. GORGAS.

ON his way from Atlantic City to his old home in Alabama, President Gorgas stopped over in Nashville for twenty-four hours. A reception in honor of Dr. and Mrs. Gorgas was given by Dr. and Mrs. W. G. Ewing, which was attended by a large number of Nashville's physicians and their wives. Dr. and Mrs. J. P. Bates gave a breakfast to Dr. and Mrs. Gorgas on their arrival in the city. Dr. Bates, for several years, was associated with Col. Gorgas in the sanitary work in the Canal Zone.

DR. T. J. HAPPEL.

Following is the report of the Committee on Resolutions of the Gibson County Medical Society, appointed by the President, A. T. Clopton, M.D.:

TRENTON, TENN., June 21, 1909.

We, your committee, appointed to draft suitable resolutions in memory of Dr. T. J. Happel, who died at his home in the city of Trenton, Tenn., on May 24, 1909, would respectfully submit the following:

WHEREAS, In the providence of God our distinguished fellow-practitioner, Dr. T. J. Happel, has been called from his earthly toils and professional labors; and,

WHEREAS, His life was characterized by extreme professional activity and usefulness, his career as a citizen and physician was ethically clean, was honorable and worthy of emulation; and,

WHEREAS, Being anxious to do the little in our power at this time to show to the world at large and to the medical profession especially, the high esteem that we, his professional, every-day associates, entertained for him; therefore be it

Resolved, That we feel very sensibly and sorrowfully the loss that the medical profession of the city of Trenton, the county of Gibson, the State of Tennessee, and the country at large have sustained in his death.

Dr. Happel graduated at the Medical Department of the University of Virginia in the year 1872 and located in this city, where his entire professional life was spent.

By the dint of hard study and his unsurpassed ability he rapidly forged his way to the front ranks of his profession, where he was recognized by the best and most eminent physicians of the land.

His highest ambition was to succeed in his profession and his greatest pleasure was to ameliorate the suffering of those who called upon him for relief. His aspirations were lofty, his ideal had but one limit, and that was the height of human attainment. In all his professional relations he was ethical in its strictest sense to the humble practitioner as well as the most eminent surgeon.

Resolved, That his efforts were to be all things at all times, to wit: to be surgeon when surgery was needed, general practitioner when general sickness was in evidence, obstetrician to the parturient woman, and specialist when special work was in demand; and his motto was that the best was none too good for the sick under his care.

Resolved, further, That while his death was premature, yet his reputation as a surgeon and his general medical ability was such as to cause his services to be in demand over a large scope of country, and that a large and lucrative practice was one of the rewards he enjoyed for the many years of strenuous activities and labors he had endured. As a recognition of his ability he had served as President of the Gibson County

Medical Society, the West Tennessee Medical and Surgical Association, the State of Tennessee and the Tri-State Medical Societies; Secretary and Treasurer of the Tennessee State Board of Medical Examiners; Vice-president of the American Medical Association; Vice-president of the Association of Southern Railway Surgeons; President of the National Confederation of Examining and Licensing Board, and Trustee of the Journal of American Medical Association.

Resolved, That it is the sense of this body that in the death of Dr. Happel the Gibson County Medical Society has lost its leading spirit and most able representative; that the people of the little city of Trenton have lost their most enterprising, energetic, public-spirited citizen. No matter what the movement was, just so its purpose was for the betterment of Trenton and its citizens, it always had Dr. Happel's hearty approval and his generous support.

Resolved, That Dr. Happel's life and work was a blessing and his death a hallowed benediction to the people with whom he lived.

Resolved, finally, That a copy of these resolutions be sent to the bereaved family, a copy be sent to the JOURNAL of the Tennessee Medical Association for publication, and that they be spread on the minutes of the Gibson County Medical Society.

D. A. WALKER, M.D.,
J. T. FAUCETT, M.D.,
W. C. MCREE, M.D.,
Committee.

BOOK NOTICES.

CLINICAL DIAGRAMS. By James C. Wilson.
Published by J. B. Lippincott Co., Philadelphia.

These diagrams consist of a set of six figures of the human trunk, on a perforated sheet, so that any one figure may be removed and used. There are two front and two back view diagrams of the chest and abdomen, and one right and one left lateral view.

They form a convenient way of indicating the results of physical examination, and when preserved with case histories constitute references of value. Accompanying each set of diagrams is a set of symbols, to be used in recording the findings. These symbols appear to be

less complicated and easier to form than many of the symbols recommended by other authors.
W. C. D.

ESSENTIALS OF MEDICINE. A text-book of medicine for students beginning a medical course, for nurses, and for all others interested in the care of the sick. By Charles Phillips Emerson. Published by J. B. Lippincott Co.

Dr. Emerson has written a book which, for the purposes intended, has few equals. It is not a book on nursing, but describes the cause, pathology and salient symptoms of the various diseases, and gives an insight into the nature of the disease under consideration. With some

diseases he emphasizes the duties of the nurse; for instance, with typhoid fever he stresses the symptoms of perforation, for which the nurse should always be on the lookout. His style is clear, forceful and interesting, and he has the happy faculty of avoiding many technical terms. The schematic illustrations by the author are good and form a valuable part of the work. For medical students the book has a peculiar value, and while it cannot replace standard text-books, they will find it useful and interesting as an aid to a better understanding of the problems of medicine.

W. C. D.

INTERNATIONAL CLINICS. Vol. 1. Nineteenth Series, 1908. Published by J. B. Pippincott Co., Philadelphia and London.

This is a very important volume, that contains twenty very interesting articles by leading men, covering the general field, as follows:

Upon Treatment, three; Medicine, five; Surgery, five; Gynecology and Obstetrics, two; Genito-urinary Diseases, one; Proctology, one; Rhinology, one; Dermatology, one; Pathology, one. Some of these papers are handsomely illustrated with photogravures and pen sketches, which add very much to these interesting papers.

A list of the contributors will be sufficient to show the high quality of this volume, as well as its character.

Under the head of Treatment we find Lawrence F. Flick, M.D., Philadelphia; James J. Walsh, M.D., New York; A. A. Stevens, M.D., Philadelphia.

Medicine.—Under this head we find articles from Campbell P. Howard, M.D., Montreal; A. Poncet and Dr. Lericke, Lyons; David Sommersville, M.D., M.R.C.P., London; L. Landouzy, M.D., Paris; David L. Edsall, M.D., and Verner Nisbet, M.D., Philadelphia.

Surgery.—Under this head we find articles by Leonard Freeman, M.D., Denver, Col.; Edred M. Corner, M.D., F.R.C.S., London; F. A. Richardson, M.D., Boston, Mass.; A. David Willmoth, Louisville, Ky.; and Joseph C. Bloodgood, M.D., Baltimore, Md.

Gynecology and Obstetrics.—Under this head we find articles by Robert Jardine, M.D., Glasgow, and Charles Greene Cumston, M.D., Boston, Mass.

Genito-Urinary Diseases.—Here we have a very interesting article by Oliver H. Kelsall, M.D., Louisville, Ky.

Proctology.—Here we find an article by Samuel T. Earle, M.D., Baltimore, Md.

Rhinology.—This is a very interesting article by Charles Prevost Grayson, M.D., Philadelphia, Pa.

Dermatology.—This is an excellent article on Sporotrichosis, by Drs. Duval and Vinard, Paris, France.

Pathology.—Here we find an excellent article on Absorption from the Peritoneal Cavity, by W. G. MacCallum, M.D., Baltimore, Md.

OBSTETRIC TECHNIQUE. By Joseph Brown Cooke (sixth edition).

In his book, Dr. Cooke treats briefly of the pregnant state, normal labor and complications, with plain directions as to their management. The book is agreeably written and is one that quick reference can be made to or that can frequently be read through. It would be a valuable addition to the library of every young practitioner who expects to do obstetrical work, and also of those who have comparatively few cases, and these few in very unfavorable surroundings. He goes minutely into the details of the case of the pregnant woman from the incipency of pregnancy to the end of the puerperium, and his directions should be given close attention and followed as nearly as possible. I think he should be upheld in his uncompromising stand in demanding that every physician who ever undertakes the care of such cases should observe all details, no matter how small, if they add to the safety of the patient; should try to foresee and be prepared to meet every emergency or complication, or should refuse their management or be held responsible—if not by the law, by his own conscience—for any accident which might follow as a result of his negligence. Ignorance and slothfulness in the care of women at such times is inexcusable and often criminal.

JOHN OVERTON.

INTERNATIONAL CLINICS. Vol. III, Eighteenth Series, 1908. Published by J. B. Pippincott Co., Philadelphia and London.

This is a very valuable volume, including twenty-four very important and interesting articles, covering the general field, as follows:

Upon Treatment, three; Medicine, four; Surgery, four; Gynecology, one; Pediatrics, two; Orthopaedics, two; Psychiatry, two; Neurology, two; Ophthalmology, three; Rhinology, one; Pathology, one. The papers are handsomely illustrated by photogravures, figures, and pen sketches, which add very materially to the interest of the papers discussed.

The simple mention of the names of the contributors will be sufficient guarantee of their high character, and will at once commend this volume to the thoughtful physician.

Under the head of Treatment we find Sir Dyce Duckworth, M.D., LL.D., F.R.C.P., Greenwich; Paul L. Tissier, M.D., Paris, France; M. Almagia, M.D., and G. Mendes, M.D., Rome, Italy.

Medicine.—Under this heading we find papers by J. A. Scott, M.D., Philadelphia; M. Guisez, M.D., Paris, France; Tom A. Williams, M.D., Washington, D. C., and John M. Swan, M.D., Philadelphia.

Surgery.—Here we have the names of John H. Gibbon, M.D., and Duncan L. Despard, M.D., Philadelphia, on a very interesting article on Melanotic Neoplasms. Also interesting articles by Eldred M. Corner, M.C., F.R.C.S., Great Ormond Street; George P. Muller, M.D., Philadelphia; and H. S. Clogg, M.S., F.R.C.S., London.

Gynæcology.—A. Schwab, M.D., Paris, France.

Pædiatrics.—J. H. Mason Knox, Jr., Ph.D., M.D., Baltimore, Md., and Richard B. Gilbert, M.D., Louisville, Ky.

Orthopædics.—F. N. G. Starr, M.B., Toronto, and Warren Walker, M.D., Philadelphia.

Psychiarty.—Joseph Jastrow, Ph.D., University of Wisconsin, and Smith Ely Jelliffe, M.D., Ph.D., New York.

Neurology.—G. L. Walton, M.D., Boston, and Jas. Sherren, F.R.C.S., London.

Ophthalmology.—William Campbell Posey, M.D., Philadelphia; Chas. Delope, M.D., Paris, France.

Rhinology.—J. Morrison Ray, M.D., Louisville, Ky.

Pathology.—Richard H. Kretz, M.D., Prague, Bohemia.



UNDER DIRECT CONTROL OF THE
U. S. GOVERNMENT

BENJAMIN FRANKLIN SAID:

*"Save, young man, and become respectable and respected;
it's the quickest and surest way."*

Haven't you an ambition? Don't you desire to stand well in your community? Sure you do. *Open an account with us today.* We will add interest to your savings.

The American National Bank of Nashville

| | | |
|--|-----------|----------------|
| Capital, Fully Paid | - - - - - | \$1,000,000.00 |
| Shareholders' Liability | - - - - - | 1,000,000.00 |
| Surplus and Undivided Profits (Earned) | - - - - - | 675,000.00 |
| Security to Depositors | - - - - - | \$2,675,000.00 |



OXFORD RETREAT

OXFORD, OHIO

NERVOUS AND MENTAL DISEASES
ALCOHOL AND DRUG ADDICTIONS

FOR MEN AND WOMEN

96 Acres Lawn and Forest. Buildings Modern and
First-Class in all Appointments.

THE PINES

AN ANNEX FOR NERVOUS WOMEN

Write for Descriptive Circular

G. F. COOK, M. D., Physician in Chief

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., JULY, 1909

No. 3

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee Shelbyville.

C. H. DAVIS, M.D., East Tennessee Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D. Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan
GEO. H. PRICE, M.D. Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D. Nashville.
Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D. Covington.
Alternate, J. D. BREWER, M.D. Dyersburg.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman* Memphis.
W. F. CLARY, M.D. Memphis.
E. C. ELLETT, M.D. Memphis.
W. H. BALDWIN, M.D. Memphis.
J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.
S. R. MILLER, M.D. Knoxville.
BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.
W. H. WITT, M.D. Nashville.
HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

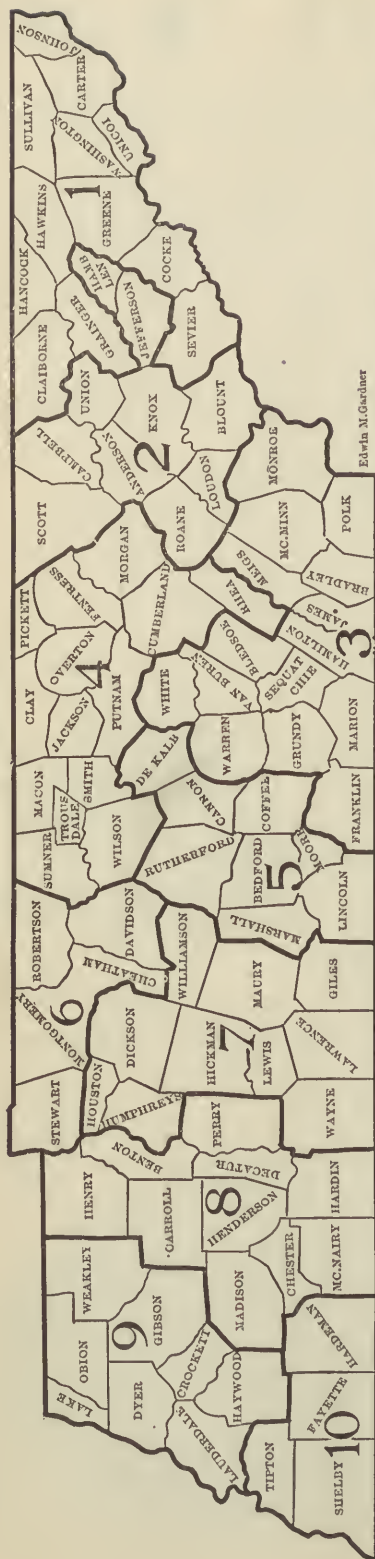
S. S. CROCKETT, M.D., *Chairman* Nashville.
W. D. HAGGARD, M.D. Nashville.
PAUL F. EVE, M.D. Nashville.
GEO. H. PRICE, M.D., *ex-officio* Nashville.
JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.
W. G. FRIERSON, M.D. Shelbyville.
J. B. WITHERINGTON, M.D. Munford.
B. D. CALDWELL, M.D. Milan.
H. H. McCAMPBELL, M.D. Knoxville.
F. J. RUNYON, M.D. Clarksville.
R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 year Franklin.

Eighth District.

E. K. McNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSON COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. McCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Belis.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. MCREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Mosheim.
Secretary, S. W. WOODYARD, M.D.....Greenville.

HAMBLÉN COUNTY.

President, W. E. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middletown.
Secretary, ROBT. W. TATE, M.D.....Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, S. B. FOWLER, M.D.....Gainesboro.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. MCNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarks ville.
Secretary, J. C. MORRISON, M.D.....Clarks ville.

MORGAN COUNTY.

President, _____
Secretary, G. R. TODD, M.D.....Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.....Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabelia.
Secretary, A. W. LEWIS, M.D.....Copperhill.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. G. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, J. T. CARTER, M.D.....Erwin.
 Secretary, E. B. HOWELL, M.D.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmersville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., JULY, 1909

No. 3

REPORT OF SOME INTERESTING CASES OF APPENDICITIS. ✓

J. HUGH CARTER, M. D., MEMPHIS.

THE last word has not been written or spoken upon appendicitis, especially so after it has gone on to the stage of suppuration. Before it has reached the suppurative stage, I believe we all will agree as to just what ought to be done for our patients—operate just as soon as possible. But the class of cases I wish to report are pus cases, or the inflammation has gone on until the suppurative stage has been reached. Therefore, I shall take up this class of cases and report them just as I saw, and how the case was managed from the outset until discharged (as I believe in this way we are much more benefited), not to go into the technical treatment as a whole, but how we diagnose and treat individual patients. Therefore, I shall only take up three cases, as I believe they will cover the suppurative form to which I wish to confine my paper.

CASE ONE.

A Mr. C. White, age 25 years, single, and a horseman by profession, was taken ill Sunday, March 25, 1907, with pain all over the abdomen, nausea and vomiting, with marked rigidity of abdominal muscles to follow. Temperature 102, pulse 100, respiration 24. The following day the patient was much better, and was not seen any more until Thursday, when I was called by the family physician as consultant. I found a patient with a sallow

look, cold hands and feet, and cold, clammy sweat; temperature 98, pulse 68, respiration laboring, sick at stomach and vomiting at times, especially on taking anything into his stomach, and hiccough; but abdomen very little distended. Large doses of salts and calomel had been given, to be followed with rectal enemas, without any results whatever.

In the afternoon patient was seen and found in a more critical condition than in the morning. Temperature had dropped to 97, pulse 67, respiration more rapid and shallow. Vomiting more pronounced, also abdomen much more distended, especially the upper portion. At this time I made a more careful examination (which was March 29, 1907), and on percussion could elicit a tympanitic note all over the abdomen above the umbilicus, and a more dull one below, with rigidity of abdominal muscles, especially over the right inguinal region; on deep palpitation was sure could feel a mass just below McBurnie's point. Mother stated that patient had vomited some fecal matter on night before. Therefore, with history and what I could find on examination, I stated to the doctor and afterward to the father and mother, I was sure there was an obstruction, and caused by a retro-appendiceal abscess, but that it might be a volvulus (as the doctor had thought), and I thought an operation should be performed at once. But as the family physician, as well as myself, was a

young doctor, the father wanted to call in an older physician, which was done (and let me say right here, we younger men should always be glad to have them ourselves). That night the father was advised to wait until morning, and in the meantime more calomel and oil were given without any results save to make patient sicker and more nauseated (diagnosis, volvulus).

The following morning, March 30, 1907, father telephoned me to meet him at City Hospital as he was on the way with son, who was much worse. I did so, and at eleven o'clock A.M. I made a median incision for exploratory purposes, and on entering the abdominal cavity I found an obstruction caused by retro-appendiceal abscess. My assistant wished to feel the abscess, and attempting to do so, ruptured it. Then the appendix was removed and all pus wiped out with wet gauze sponges, and counter opening being made for drainage, abdomen was closed by tier method, using a cigarette drain. The patient made a rapid recovery, and left the hospital on April 13, 1907. I might say drainage was removed after thirty-six hours, when wound was left to heal by granulation.

CASE TWO.

A young white man, twenty-eight years old, married, a farmer by occupation, had always been healthy until about eighteen months ago, when he had something like cramp colic, which lasted only a few hours, but was very sore over abdomen for several days, and from this time on patient had been subject to indigestion and constipation (to use his own expression), with more or less griping pain over the abdomen, accompanied by a feeling of feverishness. Lost flesh to the amount of over thirty pounds in past nine months. Had had no fever as far as patient knew at any time, and had only been treated for indi-

gestion and dyspepsia, and a complicated liver trouble.

Some two or three days before I saw this gentleman, which was on January 27, 1908, he was taken with dull boring pain just under the margin of the ribs on the right side, running to back; with some fever and sweats, also difficulty of breathing. On examining the patient I found him with a large appendiceal abscess, and an associated pleuro hepatitis, which I believe was caused by the chronic appendicitis. Patient was sent to the City Hospital, and on the following day abscess was opened and drained without even trying to remove the appendix. Cigarette drain was used, which was removed after thirty-six hours.

On February 3d, patient left hospital considerably improved, save the pleuro hepatitis, which gave him considerable trouble for sometime; in fact, I was afraid of a hepatic abscess, but on March 12th the patient was dismissed, and has had no further trouble up to this writing.

In this case you will notice I did not try to find and remove the appendix as in the previous case; some one might ask why? Simply from the fact that I do not believe it is good judgment or surgery to try to find the appendix and remove it, for fear that in doing so the wall of the abscess will be ruptured and thereby let pus into the abdominal cavity, causing a general peritonitis; but if abscess wall is ruptured, then make a median incision and remove the appendix, wiping out the abdominal cavity with wet gauze sponges, as by a median incision we can see just what is being done; then drain by use of cigarette drainage through the appendiceal opening, closing the median incision. Again you will notice I did not irrigate or flush out the abdominal cavity, as I believe it only tends to break down lymph formation and distribute the infection over a large area.

CASE THREE.

A young girl, sixteen years of age, white and single, was taken ill about two o'clock in the afternoon, January 19, 1909, with something like the old-fashioned bellyache, all over the abdomen, when mother gave her four grains of calomel in four doses, following the last dose with a tablespoonful of salts. Results, two good bowel movements. The following morning patient was feeling fine, and wanted to get up and go to school, but mother kept her in bed, as about eighteen months before she was said to have had an attack of gall-stone colic, no fever, as far as mother could tell, and patient read a novel most of the day, and ate all the dinner mother would permit. At about six o'clock in afternoon, January 20, 1909, patient was taken violently ill, with severe pains all over the abdomen, especially on right side, with pronounced nausea and vomiting. When I was called, and reached the patient, about 6.30 o'clock, administering one-fourth grain of morphine sulphate hypodermically, and waiting a few minutes, made an examination, finding the patient, as I believed, with a ruptured appendix. I advised an operation at once, which was consented to, when patient was sent to St. Joseph's Hospital, where at about 9.30 she was operated upon by myself, assisted by Dr. C. K. Summers.

On entering the abdomen over McBurnie's point, I could feel a mass about two inches above, and on close examination, found the appendix to be about six inches in length, and had turned itself forward up over the caecum and become fixed to the colon, where it had ruptured, finding about one-half ounce of pus. The parts were well packed off with gauze pads, appendix removed and parts well wiped

off with wet gauze sponges. Then stab wound was made in right flank just above crest of Ilium for drainage, to be removed after thirty-six hours, when wound was left to close by granulation.

The patient did well, and left the hospital on January 28, 1909.

Again you will have noticed I did not irrigate or flush out the abdominal cavity, but only used wet gauze sponges to wipe off all the parts that had been soiled with pus.

In this case, had I not seen the case and operated in the first six or eight hours, I would have waited until acute stage was over and then operated. In the meantime, would have given the expectant or Ochsner treatment.

In these three cases you will have seen that they are three separate and distinct cases; neither treated just alike, but outlined the treatment at time of each operation, as I believe it is the only rule to be governed by in doing abdominal surgery.

The first case, a retro-appendiceal abscess, causing an obstruction to bowel, thereby simulating a volvulus.

Second, a chronic case, with an associated pleuro-hepatic inflammation.

Third, a very acute case, with rupture of appendix.

To sum up: First, in any case where one is not positive in diagnosis do not hesitate to make exploratory incision; again, as a rule I do not believe in irrigating or flushing out abdominal cavity for any cause; in this class of surgery, each case has to be treated independent of all others. In other words, each case is a law unto itself.

Drainage should be used in all cases where a positive infection has been left, and in no other. Finally, good judgment, cool head, and common sense are the sheet anchors in doing surgery.

✓ INTESTINAL OBSTRUCTION.

J. W. BRANDAU, M.D., CLARKSVILLE.



INTESTINAL obstruction or Ileus is a closure of the lumen of the bowel from causes acting from within or without, preventing the passage of fecal matter.

There are two varieties—acute and chronic.

Acute intestinal obstruction most frequently involves the small bowel. The following are the pathologic causes of acute obstruction:

- (1) Strangulation.
- (2) Intussusception.
- (3) Volvulus.
- (4) Foreign bodies.
- (5) Adynamic.
- (6) Dynamic.

Strangulation is the most frequent cause of acute obstruction, and may be due to bands or cords the result of peritoneal adhesions, which may be found in any part of the abdominal cavity. A rent in broad peritoneal adhesions, in the uterus, bladder, the suspensory ligament of the liver, the broad ligament of the uterus, the parietal peritoneum, or the omentum; and the foramen of Winslow, may be the seat of an internal hernia. Also the various external hernias. Most cases occur after the twentieth year. The seat of the obstruction is usually in the small intestine.

Intussusception is the rolling of one portion of bowel into the lumen of another.

It occurs most frequently in childhood. Its most frequent seat is at the ileocecal valve, or 52 per cent of all cases—70 per cent in children, the ileum passing into the caecum and colon.

It may be so extensive that the intussusceptum, or invaginated portion, may be felt in the rectum.

Invaginations of the small intestine occur in 30 per cent of all cases; and of the colon in 18 per cent; invagination of the sigmoid flexure being most common.

Volvulus, or twist of the bowel, is most frequent after the age of thirty. It occurs in cases in which the mesentery is overly long, and is usually located, therefore, in the small intestine near the caecum, or in the sigmoid flexure of the colon.

According to Samson, a twist of the loop of the sigmoid to 180 degrees will not produce strangulation, but obstruction will occur when the twist has reached 270 or 360 degrees. Two coils of intestine mutually intertwined constitute compound volvulus.

Foreign Bodies may consist of objects swallowed, gall stones, coils of intestinal worms, interoliths resulting from deposits of salts from the intestinal secretions, or from the long-continued administration of large doses of some insoluble medicine, as magnesia or bismuth. These bodies may not be so large in themselves as to produce a stoppage or occlusion of the normal lumen of the bowel; but by irritation they cause spasmodic contraction of the circular fibres, and complete obstruction is brought about.

Moynihan reported a case in which a gall-stone was found loose in the bowel, having caused death by obstruction of the intestine in this way.

Adynamic, or paralytic obstruction of the bowel, is commonly produced by peritonitis. While in the beginning of such an inflammation peristalsis is increased, later on, as the bowel becomes over-distended with gas, and adhesions take place between the coils of intestine and to the abdominal walls, peristalsis is arrested.

Notlmagel believed that the paralysis is due to reflex action. Others contend that it is caused by septic infection.

Pressure of the inflammatory exudate upon the nerve supply would seem a very probable contributory cause, if not the principal one.

Dynamic obstruction is due to a contraction, over a limited area, of the circular muscular fibres of the intestine; or, in other words, a purely spasmodic stricture of the bowel. The cause may be local, such as some irritating poison; it may be in the central nervous system; or, it may be caused by reflex irritation. It is not a common cause of obstruction.

Chronic Intestinal Obstruction most frequently involves the large bowel. Its pathology may be classified as follows:

- (1) Fecal Impaction.
- (2) Stricture.
- (3) Inflammatory changes.
- (4) Tumors or Abscesses.

Fecal Impaction is most likely to occur in persons of constipated habit; the impaction occurring in the colon. This gut may become gradually distended with fecal matter until it reaches an enormous size. It may become ulcerated, and even perforated. The distended bowel is completely paralyzed. This condition usually results from imperfect digestion of such foods as cheese, boiled milk, cabbage, sweet potatoes, beans, nuts, etc.

Stricture of the bowel may result from cicatricial contraction of typhoid, dysenteric, syphilitic, tubercular, or other ulcers; but it is most frequently due to malignant growth; usually carcinoma, as sarcoma but rarely obstructs the bowel. It occurs, therefore, most frequently after middle age. Its seat is usually the colon or rectum.

Inflammatory Changes in the bowel may result from injury, chronic appendicitis, or peritonitis. The intestinal wall becomes more and more thickened; the

lumen gradually diminishing in caliber until the gut is obstructed. Chronic peritonitis also causes obstruction by the formation of kinks or angulations which are due to adhesions; or, by the pressure of exudates outside the intestines.

Tumors, Abscesses, or Wandering Viscera, may so press upon the bowel as to gradually produce obstruction.

The *Symptoms* of *Acute* intestinal obstruction are the sudden development of severe localized pain, which is usually, in the beginning, of an intermittent character, becoming more frequent and continuous as the obstruction becomes more complete; feeble pulse, indeed the patient may go rapidly into collapse, resulting in death in a few hours; normal or subnormal temperature; an anxious countenance; vomiting, coming on early if the obstruction is high in the bowel. The vomitus consists first of the contents of the stomach, later bilious matter, and finally may become stercoraceous. Stercoraceous vomiting does not usually appear until the fourth day, and the patient may die before the symptom appears. There is no stercoraceous vomiting in duodenal or high jejunal obstruction.

Peristalsis, greatly exaggerated in the beginning, in an effort to overcome the obstruction, later becomes reversed, seemingly an effort on the part of nature to get rid of the poisons being rapidly generated in the locked bowel, and accounting for the stercoraceous vomiting. Complete constipation, except in intussusception, exists; the abdomen becomes more and more sensitive to touch; is distended gradually more and more with gas; the meteorism being greater if the obstruction is low down, since the bowel is only distended above the obstruction. Meteorism is usually not present during the first few hours, and is preceded by an effusion into the abdominal cavity of more or less bloody serum which is thrown out from

the distended vessels of the strangulated intestine and the surrounding irritated peritoneum, and is detected by dullness on percussion in the loins. Meteorism occurs early in volvulus of the sigmoid.

There is great restlessness, the extremities are cold, and at times there is profuse perspiration.

The *symptoms* of *chronic* obstruction develop more slowly and gradually; and the pain which in the beginning is slight or entirely absent, in a few days becomes more and more intolerable.

The constipation gradually becomes complete; and we then have rapidly developing symptoms of the acute variety.

The *diagnosis* of intestinal obstruction is not always easy; it may be impossible without an exploratory laparotomy. The possibility of an external strangulated hernia should be excluded; the more usual locations for hernia: inguinal, femoral, umbilical, ventral, as well as the rarer forms: obturator, sciatic, perineal, should be examined. If no external hernia be found, and the symptoms of acute obstruction are present, the diagnosis of obstruction of the bowel from an internal cause may be made. In other words, the symptoms of acute obstruction from intra-abdominal causes are the same as those of strangulated hernia.

The obstruction may in many cases be located. If after violent exertion an adult be suddenly attacked with symptoms of obstruction, with the pain in the region of the sigmoid flexure, with also a developing tumor there, the bowel receiving only a small amount of fluid by enema, a probable diagnosis of volvulus of the sigmoid may be made.

If the meteorism begin in, and is limited to, the upper abdominal region, a volvulus or strangulation has most probably occurred high up in the canal. If in a child the symptoms of obstruction appear suddenly, but instead of constipation there is

tenesmus with small and frequent stools of bloody mucus, and vomiting, also possibly bloody, and upon palpation a sausage-shaped tumor is felt in the region of the caecum and ascending colon, an intussusception may be suspected.

If the patient is suffering from great and continuous pain, which is general through the abdomen, and there is vomiting, rapid and feeble pulse, quick and shallow respiration, an anxious expression of countenance, partial or complete bowel obstruction, with great distension of the abdomen, a diagnosis of adynamic obstruction from peritonitis would be made. Whether the peritonitis be the result of an appendicitis, or of typhoid or tubal perforation, or of septic infection from some other source, a careful study of the history of the case might enable one to decide. A history of a previous laparotomy would lead one to suspect adhesions or strangulation by bands, to be the cause of obstruction.

In *chronic cases*, a fecal impaction may be diagnosed by the history, the presence of a compressible tumor, which may require anesthesia for a satisfactory examination. A history of typhoid fever, dysentery, syphilis, or other causes producing ulceration, and followed long after by gradually increasing difficulty in keeping the bowels open, finally resulting in obstruction, would lead one to suspect the presence of stricture.

A history of numerous attacks of appendicitis, or of a chronic peritonitis, or of an injury, with gradually developing symptoms of obstruction, would lead one to a diagnosis of a locked bowel by adhesions which have narrowed and angulated the gut.

If the obstruction be due to a uterine fibroid, ovarian tumor, an abscess, or a wandering spleen or kidney, the history, together with a proper examination, if the patient be seen early, will enable the phy-

sician usually to make a correct diagnosis. If by digital examination, in a patient at or past the meridian of life, an indurated nodular tumor be felt in the rectum or by palpation in the region of the sigmoid or other part of the colon, with a history of gradually developing obstruction, a diagnosis of malignant disease would be made, especially if the usual constitutional symptoms of such disease be present also.

"In the diagnosis of obstruction of the bowel, the greatest importance must be attached to the five symptoms considered, viz.: Pain, vomiting, collapse, constipation, and meteorism" (Douglas' Abdominal Surgery).

The chief source of *danger* from locked bowel is not simply the obstruction; but the rapid septic infection from the decomposing contents of the bowel above the obstruction, which is believed to be the principal factor in the production of collapse.

The absorption of toxins is much favored by the formation of the so-called distension ulcers.

Another source of danger is interference with the circulation in the obstructed part, which, as in strangulated hernia, may lead rapidly to ulceration or to sloughing of the part involved. This is true especially if it be a case of strangulation, intussusception, or volvulus.

The *treatment* of intestinal obstruction, when a true obstruction exists, should be mainly surgical. A hypodermatic injection of morphine will usually be necessary; but this should seldom, if ever, be repeated; the object being only to give the patient temporary relief while preparations are being made for operation.

Fecal impaction should be relieved by enemata, assisted by other mechanical means when necessary.

Intestinal parasites and other foreign bodies may be removed by a full dose of castor oil, assisted by enemata and gentle massage.

An *intussusception* may be reduced by gas, air, or water enemata; with proper gentle manipulation of the part; but these measures should not be too long persisted in, as much injury may be done to the part of the bowel involved, and even if successful, the condition may recur, and require operative procedure later. A mistake that is often made in the treatment of locked bowel is to administer drastic purgatives, with a result only to add greatly to the patient's suffering and debility.

Only small bits of ice should be given by the mouth. Stomach washing adds much to the patient's comfort. Whatever food is given should be given by enema.

A patient having undoubted intestinal obstruction, and who is not relieved by a full dose of castor oil, or other simple but efficient laxative, with the aid of a large enema given in the knee-chest or similar position, should at the earliest possible moment be given the benefit of surgical procedure. No physician would recommend the administration of purgatives, or the prolonged use of enemata in a case of strangulated hernia.

The mortality rapidly increases as operation is postponed, as is shown by the following table by Sargent, quoted by Moynihan:

| | |
|-------------------------------------|-----|
| Operated first day, mortality..... | 37% |
| Operated second day, mortality..... | 39% |
| Operated third day, mortality..... | 61% |
| Operated fourth day, mortality..... | 67% |
| Operated fifth day, mortality..... | 73% |
| Operated sixth day, mortality..... | 75% |

"The experience of all operators coincides with this; and the imperative necessity of early diagnosis, and early operations, is universally admitted. A mortality of over ten per cent is the mortality of delay" (Moynihan, *Ab. Op.*, page 400).

DISCUSSION ON THE PAPER OF DR. BRANDAU.

DR. JOHN A. GAINES, of Nashville:

Mr. President: I wish to thank Dr. Brandau for his excellent presentation of this subject, and

I only rise to emphasize a few points he has mentioned in his paper.

The question of early operation, associated with early diagnosis, is the most important feature in regard to dealing with intestinal obstruction. Any obstruction coming up measurably acutely, in the absence of fever, or associated with symptoms of shock, depression, subnormal temperature, and local tenderness, can be separated distinctly from inflammatory conditions arising from appendiceal and other acute inflammatory conditions. All of these conditions, where we are able to exclude intestinal fecal impaction, are surgical from the beginning, and, as has been said, the death rate is so much less if early operation is done. Time should not be lost in the futile administration of purgatives. Where we have conditions that do not respond to ordinary methods, and with the typical symptoms that have been given by the essayist, to wait twenty-four, thirty-six, or forty-eight hours is to invite catastrophe. Early operation offers the only means of relief in the vast majority of cases, and it is such a safe procedure, if done early, that it is unjustifiable to delay operation unduly after an accurate diagnosis has been made, and I simply want to emphasize the importance of early operation. There can be no question that an exploratory incision, if one is in doubt, is indicated in many of these cases. Delay in many instances in operating, especially in weakened patients, adds greatly to the mortality. We should not wait for meteorism in these cases, where there is local pain, subnormal temperature, a condition of shock, with complete obstruction and failure to get a passage. Operation should be done without delay.

DR. L. E. BURCH, of Nashville:

If we are in doubt as to the diagnosis of intestinal obstruction, the most important of all things is not to give a purgative. This not only applies to intestinal obstruction, but to any lesion within the abdomen. If we are in doubt as to whether a patient has intestinal obstruction, whether he has a ruptured appendix, or whether he has beginning peritonitis from a leaking pus tube, or from any other cause, the proper course to pursue is not to give the patient anything by the mouth. The patient should be placed in the Fowler position, give him enemas, and the drip enema of Murphy should be used. Avoid all food and water, and, above all things, avoid morphine. It is proper to give morphine after the diagnosis has been made, if the condition demands it.

The classification which Dr. Brandau has

given us is the one brought out by Murphy, of Chicago, and if we are able to use it at the bedside, it will not only save many lives, but it will also save many operations. Let us take, for instance, the mechanical form of intestinal obstruction, which only comprises twenty-eight per cent, and in every case an immediate operation is demanded. By the mechanical form, I mean obstruction from bands, from intussusception, volvulus, etc. In these conditions an immediate operation is demanded. The adynamic form of obstruction, on the other hand, comprises seventy per cent. It is where we have paralysis of the intestines, either from a beginning peritonitis, from torsion of the pedicle, or from the passage of a renal calculus or gall-stone. In the paralytic variety no operation is demanded for the condition *per se*. In other words, if the man is passing gall-stones, or if he passes a renal calculus, you do not want to operate on him. Of course, if he has beginning peritonitis, an immediate operation is demanded. The principal point in the differential diagnosis between the mechanical form and the paralytic form of obstruction is made by the use of the stethoscope. In the paralytic form we have absolutely no borborygmi, while in the mechanical form borborygmus is marked. The stethoscope in this condition is more valuable in making a diagnosis than in any disease of the chest. The dynamic form is where we have contraction of the intestine from lead or milk, or ptomaine poisoning. It comprises a small variety of the cases of intestinal obstruction, only about two per cent. In this condition operation is not demanded.

I remember very well a case I had with my colleague, Dr. J. A. Witherspoon, upon which I operated for hernia. The operation was clean in every way. Three weeks afterward the woman developed symptoms of intestinal obstruction, shock, vomiting, nausea, pain, meteorism, and absolute constipation. She had shown no symptoms of sepsis in any way. The only history I could get of the case was that the night before she had a meal of fish, cauliflower and milk. On examination with the stethoscope the abdomen was absolutely *nil*. There was no sign of borborygmus. One could hear absolutely nothing. We watched the case carefully for three days. Two other consultants were called in, who insisted on operation.

DR. JERE L. CROOK, of Jackson:

Like my confreres, I was very much instructed and entertained by the classical paper of Dr. Brandau, and I feel there is no subject to which we can give our attention that means more for

our clientele than the one under discussion. Our ideas have undergone a decided change as to what to do in cases of this character. It is a well-known fact that men who devote themselves exclusively to surgery have long been fixed in their opinions as to when to operate on these cases. When we consider that this Society embraces in its membership a large majority of men who combine emergency surgery with ordinary medical practice, then, it seems to me, they are the ones to whom this subject should be of great interest. Upon their decision depends very largely the issue in a given case. The general practitioner, to whom is presented a case of this character, has perhaps a most difficult problem, one that is hard to settle. So far as the question of appendicitis is concerned, it is settled everywhere, and we find that men who do not operate themselves, turn their cases over to a surgeon in the vast majority of instances. Intestinal obstruction, on account of the manifold etiology of the condition and the difficulty of making an exact diagnosis before the abdomen is opened, presents a problem to the man of limited surgical experience that is embarrassing. We find in many instances that these cases occur in the country, and while the physician does his very best under the circumstances, he is not able to make an exact diagnosis before operation, and he is not far behind the surgeon, because most surgically exact diagnoses are made after the abdomen is opened. I will admit that to use ordinary routine measures with a view to getting the bowels to move and allowing time to elapse after the physician is first called until he has had an opportunity to use some purgative, which he does frequently, is not exactly the proper thing to do, but it is the only thing he can do under the circumstances for this condition. Frequently, the use of enemas is prolonged to such an extent that when the surgeon is called in, the patient is almost moribund. That is the experience of many of those surgeons who have received cases on the fourth or fifth day, when the mortality from operation is high. No surgeon desires to have surgery brought into disrepute by operating on such cases, and yet the conscientious man will operate under the most distressing circumstances and conditions because of the fact that without operation there is no chance for recovery, while with it there is a possibility of recovery.

I think the value of this paper and of the discussion by my confreres consists chiefly in the fact that it presents to the general practitioner the necessity for early diagnosis, and if a diagnosis cannot be made, there should be immediate consultation with a surgeon, and then, if there is

still doubt, an operation should be undertaken at once.

In the case of adynamic ileus following operation, which was reported in this discussion, there is no question but what such an operation is not indicated; but there are certain types of obstruction in which the diagnosis is so palpable and the necessity for immediate operation so evident, no man can err therein. There we can make a more exact diagnosis after the abdomen has been opened. It is easy to make a diagnosis of intussusception; it is an easy matter to make a diagnosis of obstruction from beginning peritonitis, but it is not so easy to make an exact diagnosis in a case of mechanical obstruction, whether due to a band, or mechanical obstruction from the presence of some foreign body or something else. But in those cases in which we are in doubt I think it is better to open the abdomen. The main point I want to emphasize is that if we are in doubt we should call in help, and if there is still any doubt, we should open the abdomen as quickly as possible.

DR. CHARLES P. McNABB, of Knoxville:

I have had a little experience which I think is worth remembering and recording, and that is, apparently, the spontaneous cure of an intestinal obstruction, in a three-year-old child. Some months ago I saw a child with Dr. Layman in Knoxville, with what we thought was intestinal obstruction. The history of the case was, briefly, that while the child was playing in the yard, it was suddenly seized with intense pain in the left lower quadrant of the abdomen. The child went immediately into the house, crying with pain. The bowels soon moved; the child vomited incessantly, and continued to do so up to the time of my call. There were numerous actions of bloody mucus. Pain continued; the child's temperature was subnormal, and it was in collapse within a few hours. The symptoms in collapse within a few hours. The symptoms and appearances were those of an acute invagination, and this was the diagnosis that had been made, and I agreed with it. I advised that the child be sent to the hospital for immediate operation, but the parents objected and it was not done. The next morning, before the attending physician called to see the child, another physician was called, and he was not told of the child's condition the day before, nor that other medical men had been consulted in the case, and there was so much improvement that he pronounced the case as an acute cold, and prognosticated a speedy recovery, which soon followed. That this case was one of the rare acute invaginations that ended in spontaneous recovery. I have not much doubt, but, needless to say, that family has but little confidence in my opinion of such cases.

EXTRACTION OF THE OPAQUE AND PARTIALLY OPAQUE LENS IN ITS CAPSULE.

REPORT OF FORTY-SEVEN CASES.

DR. L. B. GRADDY, NASHVILLE.



THE evolution of cataract extraction is a matter of history with which all are doubtless familiar. The only real progress made toward an ideal operation within the last half century was made by Major Smith, of the British Army in India. It remained for Major Smith to answer the very important question many times asked: "What shall we do with the capsule?" His answer: "Remove the lens *in* its capsule," is so complete and satisfactory that we are astonished that some one of the many brilliant operators throughout the world had not practiced the procedure long before Major Smith's day.

There is nothing in the anatomy of the eye to contra-indicate the procedure, and with the present-day methods of asepsis, we fail to see why a comparatively simple operation should be converted into a complicated one, or why the eye should be subjected to one or more after-operations attended with considerable danger.

The same delicacy of manipulation with less traumatism than by the usual method should and does yield better results. The latter statement should be taken as made, for I shall not attempt to compare the visual results of any number of eyes operated on by the usual or older method with the newer, but content myself by stating the results of the later operation. Before proceeding, however, I may say that Major Smith's method left but one more step to be taken to enable us to reach the ideal, in this the capital operation on the eye. It is my pleasure to announce that that step has been taken. To be a

little more explicit, the ideal cataract operation consists in the removal of the opaque or the partially opaque lens in its capsule *without* iridectomy. This can be done in so nearly all eyes that I feel quite certain it will become the operation of the future. I have done the ideal operation only a few times, but have gone far enough to convince myself that within a short time anyone making an iridectomy in many of his cases will be regarded as either a bungler or an unnecessary mutilator of the eye. To make the ideal operation, I use a weak mydriatic about one hour before the operation, and then a few minutes before operating, use a rather strong miotic, being careful to remove the lens before the miotic contracts the pupil. I regard the number of instruments generally used as rather formidable and altogether unnecessary in a large majority of cases. In all except the small, deeply-set eyes with overhanging brows, or extremely timid people, I use the knife only. The lid speculum is unnecessary in cases where the eyes are normally set, or a little prominent. In such cases the eyelids can be easily held apart and the eyeball steadied with the fingers. After the corneal section, pressure is made with the upper finger, and counter-pressure by the handle of the knife. We thus have only the section, the least possible amount of traumatism for the removal of the lens, and a normal pupil, which is a great advantage to the patient. Of the last twelve cases of extraction of the opaque or partially opaque lens I have made, in six cases the pupil was narrowly contracted in thirty

minutes after extraction; in two, partially contracted, and in one the pupil was still dilated one hour after the operation, but yielded to the miotic and was narrowly contracted four hours afterward. There was no loss of vitreous in any of the nine cases—no prolapse, nor entanglement of the iris in the wound after healing. Six weeks after the operations the pupils were round and active. The average vision was better than in those cases where an iridectomy had not been made, being eight-tenths in six cases, and seven-tenths plus in three cases. The youngest patient of this group was fifty-five, the oldest seventy—five men and four women, all white and in good health. The usual number of instruments were used, and Major Smith's technique closely followed in thirty-eight cases, iridectomy being made in all. Vitreous was lost in seven cases varying in quantity from a bead to an amount sufficient to cause some anxiety. The largest amount of vitreous was lost in my earlier cases, still fifteen months after the operation no ill effects have resulted. There is no detachment of the retina and vision is satisfactory, although not normal, being four-tenths in one, five-tenths in two, and six-tenths in three. The youngest of the whole number (forty-seven cases) was fifty-five, the oldest eighty-four, the average age being seventy-two. The average vision for the whole number is six-tenths plus. The lens was completely opaque in twenty-six eyes, and partially opaque in twenty-one. Fourteen of the partially opaque had four-tenths vision; four had five-tenths, and three six-tenths. (The latter three were operated upon under protest, the patients being sixty-seven, sixty-nine, and seventy-one, respectively), and six-tenths plus vision having been secured in the fellow eyes, the only gain to be expected was that of binocular single vision.

DISCUSSION ON THE PAPER OF DR. GRADDY.

DR. G. C. SAVAGE, of Nashville:

Mr. President: I am sorry I did not get in to hear all of Dr. Graddy's paper, but the part I heard I was very much interested in.

The ideal cataract operation is, beyond all question, the extraction of the lens in the capsule, and I suppose that one of these days Mr. Smith, whom Dr. Graddy has quoted, will be able to devise some instrument by means of which the lens can be torn loose from its ligamentous attachment in a harmless way, allowing us in this way to take as little risk in extracting the lens in its capsule as in extracting it and leaving the capsule behind. The reason that it is the ideal operation is not because it is the simplest operation, but every man who has operated for cataract knows the risk of subsequent clonding of the capsule which has been left behind, necessitating a secondary operation. For many years I undertook this operation without any fear, notwithstanding the fact that in the hands of some men there had been disastrous results following such a simple procedure. But my time came when there was trouble, which made me always dread the secondary operation practically as much, if not more, than the primary operation in the extraction of the lens without the capsule. If instruments could be devised by means of which pressure could be made on the lens itself, tilting forward at the top or backward at the top, and forward at the bottom, and tilting it from side to side, tearing loose the ligamentous attachments, making the lens easy of removal, it would be an easy matter. But the risk of rupturing the hyaloid membrane and having an escape of vitreous is considerable. There has been quite a percentage of accidents of that kind in the practice of Mr. Smith, and none of us can expect to acquire within a reasonable length of time the skill he has acquired. I have accidentally extracted the lens in its capsule a few times. The use of the cystitome is necessary in order to get the lens without capsule out. As a rule, the capsule is torn with the cystitome, and the lens easily escapes. The pressure for dislodging the lens when the capsule has ruptured is practically *nil*, when compared with the pressure exerted when the capsule has not been ruptured, when we must tear loose the ligamentous attachment to the lens. But some years ago I learned to lessen the pressure in a way that probably others have been doing, so that I fear I have no special knowledge in that regard to offer. After making enough pressure on the eye, I make the cataractous lens

present itself in the wound, transfix it from behind, lift it out, relieving absolutely the pressure on the eyeball. I have had hardly any escape of vitreous during the several years I have practiced that procedure. If we could dislodge the lens in its capsule without the fear of rupturing the hyaloid membrane, we could lift out the lens, capsule and all, but until the operation has been made more simple and easy by the invention of instruments that have not yet appeared, so far as my judgment is concerned, I shall still follow the method of extracting the lens and leaving the capsule behind, then making a secondary opening in the capsule, should it ever become opaque. I try to lift the anterior capsule out of the way, with the cystitome, and we must take the risk of the posterior capsule becoming cloudy and necessitating a secondary operation. The danger of a secondary operation is the development of glaucoma, for which no man can account. Glaucoma not infrequently follows a simple secondary operation for cataract that has seemed so easy and ought to be free from any danger whatsoever. A great many men have devised different means for the secondary operation, and yet none of these devices have proven to be universally satisfactory. I shall rejoice when the time comes, if we can all take hold of our cataract cases and remove the lens, in its capsule, and then no secondary operation will be needed. The incision described by Dr. Graddy is ideal, and we all make it.

DR. G. E. VAUGHAN, of Clarksville:

I want to thank the essayist for his excellent paper. I believe it is one of the first papers that has been presented in the South that I have seen in regard to this method of extraction of the lens. It certainly represents progress. It has been my custom always to adopt the old method, but I am certain that this procedure is the one that I shall follow in the future. I have not, however, the dread of it that Dr. Savage seems to have about losing vitreous. It has been demonstrated that the loss of a small amount of vitreous is not dangerous to the eye, and Mr. Smith makes that statement in a report of several thousand operations, and in the event some of it is lost, it has not been demonstrated that the vitreous does not reform again. It can be replaced in some instances by other fluids in order to restore the normal tension.

Dr. Graddy spoke of having hemorrhage from the flap. Possibly the use of adrenalin might control that.

In regard to infection following the operation, I should not think there would be much danger

in that respect, particularly with the method he has described, as we do not use as many instruments in the eye. On the whole, this procedure is to be recommended.

DR. GRADDY (closing the discussion):

I have very little to add in my closing remarks. Dr. Savage did not define an ideal operation or one which I understand to be ideal. He contented himself by saying that an ideal operation consisted in removing the lens in the capsule. My idea is to remove the lens in its capsule *without* an iridectomy. That is what I have defined in my paper as an ideal operation, and anything short of that is not quite ideal. We should leave the patient with a round normal pupil.

This is about the first time I have heard Dr. Savage express much timidity about any procedure. I believe he is overawed with the amount of pressure which he thinks necessary to deliver the lens in its capsule, but I assure him it does not require more pressure than when the capsule is ruptured. I recall having had the same feeling that he has, before my first removal of the lens in its capsule, and I must say, I have not been as much surprised, I do not know when, as I was with the ease with which the lens came out in its capsule upon the exertion of the slightest amount of pressure. It is not so much the amount of pressure as it is the point of pressure. That is the whole thing. If pressure is exerted on the lower part of the cornea, one-third the distance above the sclero-corneal junction, perhaps a trifle more than that, but about that, with only gentle counter pressure above, you will be astonished to see with what ease the lens comes out. In doing this operation most operators get in a hurry. They seem to feel, consciously or unconsciously, and without warrant, that they are subjecting the eye to greater risk than by the old method, and they perhaps intentionally apply more pressure than necessary. But really only a little pressure is required. We will have loss of vitreous at times, whether we deliver the lens in its capsule, or whether we open the capsule. It is not possible to devise any instrument which could be placed and engage the lens posteriorly and lift it out. The amount of pressure to be exerted to deliver the lens in its capsule has been overestimated. The necessary pressure is very slight, and need not be above that after capsulotomy. I, myself, have not been able to detect the necessity for it, as the lens comes out very easily. I really think the next instrument that will be devised for this operation will be a knife, very light, with

triangular blade, or on that order, so that the section may be completed by one stroke of the knife, the knife reversed, and by pressure, with a curved handle on the lower part of the cornea, with counter pressure of the finger separating the lids above, the lens will come out through flabby or dilated pupil. We should not try to

force the lens out through a contracted pupil. By using a weak mydriatic about an hour before the operation the rigid sphincter is overcome and the pupil dilated. Five to ten minutes before the operation a myotic is instilled into the conjunctival sack and the lens removed *before* the pupil begins to contract.

INTUBATION AND ANTITOXINATION IN THE WORST FORMS OF LARYNGEAL DIPHTHERIA.

J. M. TROUTT, M.D., JACKSON.



Y paper is based on clinical notes taken at the bedside of patients treated by myself in the Kingston Avenue Hospital of the New York City Board of Health, of which hospital I had the honor to be house surgeon.

I wish to have it definitely and clearly understood that I shall only consider the worst forms of laryngeal diphtheria. I am not concerned with nasal diphtheria, pharyngeal diphtheria, tonsillar diphtheria, or even the moderately severe forms of laryngeal diphtheria. And by the worst cases, I mean those cases which, in private practice, we would ordinarily consider doomed—the cases which we send to the hospitals in order that they may have every infinitesimal chance. I mean the cases which are so septic that the odor of the patients' breath tells us of the impending dissolution, the cases in which the child's frantic struggles for air, the expression of agony so marked in his face, body, and actions, that it would melt the most flinty heart of any Stoic.

In his "Practice of Medicine," Anders says:

"The causes of death in diphtheria in their order are as follows:

"1. Membranous croup or laryngeal stenosis.

"2. Septic infection which may be a slow death.

"3. Sudden heart failure—paralysis of the heart.

"4 Broncho - pneumonia — following tracheotomy, or occurring during an advanced stage."

Croup, then, is the all-important indication to be met. What physician here has not seen this picture? The child breathes with the greatest of difficulty—tries to sit up and leans forward; his breath comes in gasps; his pupils are dilated, his face gets blacker and blacker; the sweet, red lips that his mother is so fond of kissing grow purple and then black, and in the very desperation of his agony the chubby little hands, now dusky and the nails almost black, clutch at his throat to get rid of the obstruction to his breathing.

Can you imagine a more distressing and heart-rending picture? Let us see what intubation will do for this child. The almost frantic mother and father are driven from the room. The tube is introduced; the child gives a peculiar metallic cough, his breathing immediately becomes as easy and as soft as in slumber, the natural pinkish color of his little body replaces the purple and black hues of approaching death. The mother comes in and cradles the child in her arms. The little fellow, tired out and exhausted by his first real struggle for existence, gives a smile of ineffable sweetness of relief—turns over and falls asleep.

Can you understand why this mother feels like falling down and worshipping the man who performed this miracle for her child. Even if the child dies—at least he dies as one who lays himself down to pleasant dreams—not as Laocoon and his sons, in the throes of mortal agony.

My contention is that intubation meets the most frequent cause of death in laryngeal diphtheria—membranous croup or laryngeal stenosis. I do not think that this statement has been nor can be successfully controverted.

I don't think any comparison between intubation and tracheotomy can be drawn. Intubation meets every indication that tracheotomy does, can be done quicker, and is not attended with so many dangers. In cases where intubation affords no relief it is because of one or both of two conditions:

1. In case the membrane is below the distal extremity of the tube.
2. In case of broncho-pneumonia.

If the membrane is below the tube, and consequently also the obstruction, I want to say that tracheotomy is likewise useless, as the tracheotomy tube does not reach so far as the O'Dyer tube. In the course of my hospital experience I have seen many intubations, and but three tracheotomies following intubation. In these three cases the tracheotomy afforded no more relief than did the intubation, and all three cases died within four hours after the operation.

In broncho-pneumonia, neither intubation nor tracheotomy are of any avail to relieve the dyspnea. But by all means I think we should try intubation in cases complicated by broncho-pneumonia, as it is the most difficult thing in the world to locate a consolidated spot in a croupy child. At any rate, intubation is a safe thing to attempt.

Quoting from Jacobi:

"I shall not even be tempted to discuss

the criminality of allowing a child to suffocate without resorting to mechanical relief. Nor shall I compare the two operations with each other. I can only say that for years I have not seen a case in which intubation would not take the place of tracheotomy, and have, therefore, not performed the latter. Intubation takes the place of tracheotomy in most cases; in none does it make it impossible, when required in the opinion of the operator. The latter operation (tracheotomy) may be preferred or become necessary for the purpose of getting at trachea and bronchi for mechanical removal of membrane and other local treatment, rare though these cases be in which such procedures are attended with success."

But laryngeal stenosis is not the only indication to be met in the treatment.

We must combat the secondary toxemia with its sweeping degenerative changes in the organs and viscera. Intubation is not in any sense of the word a curative agent. But it affords relief from the mechanical obstruction in the larynx long enough for us to attempt to neutralize the poison absorbed in the system. How shall we meet and prevent this second most fatal condition? My answer is, *by the use of frequent and massive doses of antitoxin.*

Quoting from Briggs and Guerard:

"It matters not how the subject is regarded or how it is turned for the purpose of comparison with previous results, the conclusion reached is always the same—namely, there has been an average reduction of mortality from the use of antitoxin in the treatment of diphtheria of not less than fifty per cent, and, under most favorable conditions, a reduction to one-fourth or even less of previous death rate. This has occurred not in one city at one particular time, but in many cities, in different countries, and at different seasons of the year, and *always in conjunction with in-*

roduction of antitoxin and in proportion to the extent of its use."

It is interesting to note with what skepticism antitoxin was first received, and how scanty the dosage. At the time of its introduction the use of antitoxin was only tentative, and so, of course, not entirely satisfactory.

At its Washington meeting in May, 1897, the American Pediatric Society received the report of its committee on the collective investigation of antitoxin treatment of laryngeal diphtheria in private practice. Its salient points are as follows:

"1. That before use of antitoxin, 90 per cent of cases of laryngeal diphtheria required operation. Under the antitoxin, however, only 39.21 per cent need operation.

"2. That the percentage figures have been reversed; formerly 27 per cent represented the recoveries; now, under antitoxin, 27 per cent represents the mortality. *The committee expects still better results when antitoxin will be administered earlier and in larger doses.*"

In the days when intubation and antitoxin were unknown, practically every case of laryngeal diphtheria was doomed. Immediately upon the introduction of antitoxin, in 1892, and its use, the mortality rate began to decrease, and especially was this decrease marked in the laryngeal type. At this time the use of antitoxin was only experimental and in small doses.

In 1894, we have Dr. Dillon Brown's cases of intubation and antitoxin—67.8 per cent recovered. And the demand was for larger doses of antitoxin.

In 1897 the American Pediatric Society committee reported operative cases, 668, mortality 27 per cent. And still the recommendation is for larger doses.

Park, in 1898, recommends 6,000 units. Anders recommends 4,000 units, repeated, if necessary, in ordinary forms of diphthe-

ria, and massive doses in laryngeal diphtheria.

If all the roads led to Rome in olden days, to what do all these facts lead? They lead to the fact that there has been a decrease in mortality in laryngeal diphtheria, proportionate to the increase of the dose of antitoxin.

All the above statistics were compiled ten years ago, and since that time our knowledge of antitoxin has advanced. The serums of today are purer and more concentrated. The serum used by the New York Board of Health contains 1,000 units to the c. c., as a rule, hence we can give large doses in small bulk. I have practiced, and now advocate, frequent massive doses of antitoxin in the worst forms of laryngeal diphtheria. By this I mean 10,000 or even 20,000 units at the first dose. All in all, 30,000 or even 40,000 units may be given. It goes without saying, that the earlier you get the case the better the result.

Anders places broncho-pneumonia last in point of frequency in causing death in laryngeal diphtheria, but I think it takes a little more prominent part in laryngeal diphtheria. In fully one-third of the bad cases of laryngeal diphtheria I think you will find broncho-pneumonia. It has been shown that the pneumonia may occur in several ways:

The membrane itself may extend down into the bronchi. The germs also may invade the lungs, and less commonly a generalized bronchitis extending into the ramification of the bronchi due to irritation of aspirated substances causes the well-known Aspiraton pneumonia.

But far more common is lung infection due to streptococci and pneumococci.

In case the pneumonia is due to invasion of the lungs by the Klebs-Loeffler bacilli, with or without the formation of membrane, I maintain that the case is benefited by the use of antitoxin—the amount of

good depending upon the day of disease and extent of involvement.

Aspiration pneumonia is admittedly due to the concurrent disease, and if we can get rid of the condition in the throat quick enough, there will be no particles to aspirate; hence, antitoxin is only a prophylactic here.

When we take up septic diphtheria, the disease has reached the acme of its severity. We see the lungs infected with streptococci and a broncho-pneumonia resulting. Here, I must admit, we meet with high mortality, and antitoxin can do very little if anything. How is sepsis produced? By the Klebs-Loeffler bacilli, and then secondary infection by the streptococci? The diphtheria bacilli do not enter the circulation, and so cannot produce sepsis, but it is generally believed that the diphtheria toxin, by its effect on the organism, paves the way for an invasion by the streptococci.

But antitoxin has but little effect in septic cases. What little it does have is due to the fact that it lessens the susceptibility of patients to secondary infection, and strengthens them to overcome it after it has occurred. Therefore we should use antitoxin and expect the amount of good to depend on the degree of sepsis.

I expect to be criticized on the size of the doses of antitoxin I advocate, but that will be no more than what has been said since the introduction of antitoxin, in 1892. It has been said that antitoxin causes rashes, joint pains, fever, paralysis, and even sudden death. As for the rashes and fever, I admit that the antitoxin used in former times may have caused them. But I deny most emphatically that sudden heart failure or paralysis are caused by antitoxin.

Gentlemen, I wish to state that I have seen quite a few cases of diphtheria in the Board of Health Hospitals of New York City, and in private practice, and have

never seen a single harmful after-effect of antitoxin, with one exception. A boy five years old presented urticaria on his arms and legs about twelve hours after injection with antitoxin. The rash disappeared in four hours without treatment.

Jacobi well says:

"At all events a single case of a suggestion, or a suspicion of vomiting and aspiration of a solid body into the air passages, or the injection of air into a vein, or excitement or fright, or a lymphatic state, or a large thymus, if at all applicable to an individual case, does not permit of a universal interpretation."

Behring himself explains the occurrence of undesirable effect of his serum, only by the accidental albuminoids and salts contained in the serum.

They are, according to him, greatly reduced by increasing concentration, even to the dry state, which he succeeded in obtaining. In the concentrated form the antitoxin is absolutely injurious, without poisonous effects in man or animal, healthy or sick.

H. Biggs recapitulates many of his previous writings in a paper read before the Society of the Alumni of Bellevue Hospital, as follows:

"Since the introduction of antitoxin treatment, the mortality of diphtheria is reduced to one-half, its course is milder and shorter; an injection made in the first two days reduces the mortality to five per cent, the earlier it is made the better the result.

"Small quantities of concentrated serum are tolerated by very youngest babies. Antitoxin has no secondary effects on the heart, kidneys, or nerves. Heart failure and paralysis, whenever observed, are caused by diphtheria and not by antitoxin.

"Antitoxin has been accused of every untoward condition met with in the treatment of diphtheria, and yet paralysis and sudden deaths were recognized as common

in diphtheria before antitoxin was ever dreamed of."

Is there one single condition now ascribed to antitoxin that cannot be found in the history of diphtheria before antitoxin was introduced?

Finally, what are the two main causes of death in laryngeal diphtheria in their order?

1. Laryngeal stenosis, which is to be met with intubation.

2. Septic infection, which is to be met with frequent massive doses of antitoxin.

DISCUSSION ON THE PAPER OF DR. TROUTT

DR. G. E. VAUGHAN, of Clarksville:

I can only endorse everything the doctor has said. I do not think I can take issue with him in regard to the dosage of antitoxin. Possibly the only point concerning which I do not exactly agree with him from my own experience is that which relates to the unpleasant effects of the antitoxin in some rare cases. I do not think a little urticaria or dyspnea, which is spoken of in connection with the reports of some cases, should prevent anyone from giving antitoxin. It should be given early, and as the doctor says, in large doses. I think the good results we get from it decidedly outweigh any untoward results. Occasionally a case of urticaria is reported as following the use of antitoxin.

DR. FENTON B. TURCK, of Chicago:

Theobald Smith discovered an interesting phenomenon which has a close bearing upon the question of the injection of the antitoxin from a scientific standpoint. He found that a second injection of serum into an animal after an interval of a few days resulted in death. He mentioned this fact to Orth, who made similar investigation. In the blood of animals so injected a sensitizing substance was found the very opposite of antitoxin—anaphylaxin it is called. This reaction is known as the Theobald Smith Phenomenon.

Richet, Rosenau, Gay and Southard have confirmed these experiments and have observed that anaphylaxin is not due to the action of an antitoxin, but to the repeated injection of serum.

The paper just read is but further evidence of the close relation between clinical experience and scientific research, which teaches us to give one large dose of antitoxin in preference to several small ones, which may excite anaphylaxis.

DR. T. H. MARABLE, of Clarksville:

I entered the profession before the advent of antitoxin, and in my early days I ran into an epidemic of diphtheria in the southwestern portion of Montgomery County. Being a young physician, my patients were among the poorer classes. My neighboring physicians, who had established themselves in practice, got their clientele from among a better and more prosperous class of people. I treated some sixty-odd cases with bromine solution, without the loss of a single case. I never had a case of membranous croup during this epidemic. My neighboring physicians were not so fortunate, quite a number of their cases dying from membranous croup. During this epidemic there were two families in which there was an epileptic in each family. The disease developed quite early in both of these families, but neither of these epileptics had diphtheria. I would like to ask if any member of this Society has ever treated diphtheria in an epileptic. We have had a number of cases of membranous croup, such as Dr. Troutt has described, in the past twenty years. During that time we have been having mild cases of scarlet fever cropping out every now and then. In these cases of membranous croup there was slight fever, with the formation of a membrane, but in my cases I did not see any membrane developed in the pharynx. In the epidemic of diphtheria, of which I have just spoken, all the cases began with pharyngeal inflammation, with a diphtheritic deposit. I remember one family in which there was one death, and two in a dying condition from membranous croup, the other two dying in twenty hours after I was called. The diphtheritic deposit had extended to the vulva and anus in these children. One of them had diphtheritic inflammation of the stomach, the other diphtheritic inflammation of the kidney. Since that time I have seen but few cases of diphtheria. Since antitoxin has come into vogue, I have been using it in my membranous croup cases. I do not regard these membranous croup cases as typical of that disease.

DR. JERE L. CROOK, of Jackson:

I am interested in this subject. This is the initial paper of the essayist before this Society, and it is one which does him credit.

As to his experience in hospitals with large doses of antitoxin, I have not found it necessary in private practice to use anything like the size doses he gives in the cases of diphtheria that have come under my care. My idea in regard to dosage is this, that the dose should be governed

largely by the time in which it is used. Statistics show that if antitoxin is used within the first twenty-four hours, it will cure ninety-six per cent of the cases. Every day after that the mortality record is much higher. The inference to be drawn is this: make your diagnosis promptly, and act quickly. If you are in doubt, lead trumps, and use antitoxin anyway. I believe that an initial dose of 5,000 to 10,000 units of antitoxin in laryngeal diphtheria is all that is indicated, where it is used in the first twenty-four hours. I have never lost a case that was treated with antitoxin. I have never found it necessary to give 20,000 to 30,000 units at one time. That is the only feature concerning which I would take issue with the essayist.

DR. MARABLE: May it not be that the cases are more malignant in the North than in the South?

DR. CROOK: That may be so. As I understand, the doctor eliminated the mild cases. You cannot tell when a mild case is going to become malignant, but if there are signs of malignancy, I would give from 5,000 to 10,000 units, and these large doses will effect a cure before the case becomes bad. If we can give these patients antitoxin promptly, and give it to them in from 5,000 to 10,000 unit doses, we will practically cure all of them. My son, who had a virulent attack of diphtheria, was given 9,000 units. I was not at home at the time. The injection of antitoxin was delayed on account of the disease having started in mid-summer, it being the first case found in the town. Forty-eight hours elapsed from the beginning of the disease before antitoxin was administered. The initial dose used was not as large, perhaps, as it should have been. At any rate, he required only 9,000 units in all, and got well.

DR. DULANEY, of Dyersburg:

In regard to the use of antitoxin, I think the essayist failed to bring out clearly that there are a certain class of practitioners in the country who cannot have a microscopical examination made early enough to enable them to make a positive diagnosis, and if they have suspicious cases the use of antitoxin will not do any harm, but may do a great deal of good, particularly when given in large doses. If the case or cases should not turn out to be diphtheria, no harm is done.

Recently we have had an epidemic throughout West Tennessee of streptococcus infection, and probably in some of these cases a positive

diagnosis was not made by the microscope, and I presume they would get well from bromine treatment. I believe that diphtheria and membranous croup are one and the same thing.

DR. CHARLES, P. McNABB, of Knoxville:

I said yesterday that the day for discussing the use of antitoxin had passed. The question now is the amount to be used. I have had a little experience in the treatment of diphtheria, especially of the laryngeal type, and where antitoxin was used within the first thirty hours from the onset of the disease all of them recovered. In addition to antitoxin, I gave to each one ten grains of calomel, but whether it did any good or not, I do not know. But that has been a routine practice with me. In the last seven cases I treated I gave each 10,000 units of antitoxin on my first visit, and each patient recovered promptly. Just a word or two about the laryngeal type of the disease. I give larger doses in nose and throat diphtheria, as a general rule, than in the laryngeal form. In the laryngeal form, patients do not die from the toxin, but from the croup, the strangulation. Other cases die from the toxin, and it takes a larger dose to control diphtheria of the nose and throat than of the larynx. I have given 20,000 units in one day to a patient seven years old. He had severe urticaria, and joint pains afterward, but no other inconvenience from the antitoxin. It was a case in which the entire fauces were covered with membrane. You could smell the odor when you entered the door. The child was in such a condition that it looked as if it would die right away. He had 26,000 units in all, and made a complete recovery. I am glad to hear Dr. Turck so strongly emphasize the importance of giving large doses at once. If you were going to neutralize a poison in a test-tube, you would not commence by putting in a chemical to neutralize it a drop at a time, but you would simply neutralize at once. And that is the proper way with regard to the use of antitoxin.

DR. TROUTT (closing the discussion):

I wish to thank the members of the Association very much for the generous discussion that my paper has elicited. I assure you it is fully appreciated.

Dr. Vaughan said that there have occurred some unpleasant effects as the result of diphtheria antitoxin. I admitted that in the paper. I can explain them very readily. The commercial brands of antitoxin on the market are not the most perfect samples to be had. The commercial antitoxins do not run in strength over 500 or 600

units to the c. c. To give 10,000 units you have to give a bulk of so great an amount that you produce pressure symptoms at the site where you administer the antitoxin. A good deal depends where you inject it. I am very sorry to say that I have heard of one case where antitoxin was given in the leg. That is about the worst place where it could be injected. There is very little areolar tissue there, and necessarily absorption would be slower than anywhere else. You will get a slight degree of redness after the injection of antitoxin and soreness over the site of injection, but it depends upon the amount you inject. I have used in New York City for the Board of Health 12,000 units to the c. c. Fisher, in his latest work, says that he has used antitoxin in the dry state, and given it by the mouth.

I am very much obliged to Dr. Turek for his

remarks, and I want to emphasize the point he made, namely, to give big doses of antitoxin early, and you will entirely eliminate the anti-philexis that occurs, and which is the cause of sudden death.

I am afraid Dr. Marable wants to draw me into an expression of my views as to whether all cases of croup are diphtheritic in origin. I did not touch on that point, because I knew there would be difference of opinion in regard to it, and I will not discuss it now, as it is not germane to the subject. There are cases in which we have diphtheria by cultures; in other words, there is no exudate on either tonsil, in the larynx or pharynx, but if you will take a culture of the patient's throat, you will get diphtheria bugs. This has occurred time and again, and is what we call experimental diphtheria.

PHYSIOLOGIC LAWS GOVERNING THE ACTION OF PURGATIVES.

GEO. E. PETTEY, M.D., MEMPHIS.



WHILE the title of this paper is "Physiologic Laws Governing the Action of Purgatives," it is not my purpose to confine myself to the agents usually administered as purgatives, but to consider any or all the influences by which the secretory and motor functional activity of the intestinal canal can be stimulated. I write as a clinician only.

Purgatives occupy such an important place in the treatment of disease and have been and are so extensively used that it would seem that the principles upon which their action depends would, long since, have become a matter of common knowledge, but experience has convinced me that such is not the case. In the Healing Art, so much depends upon the practical application of these principles that every physician should aspire to a complete mastery of them and thereby be saved from dependence upon the half knowledge of empiricism.

It should be remembered that the key to the secretory and motor activity of the intestinal canal, and of the glands emptying their products into it, is the nerve centers. Success in any effort to secure evacuation of the intestinal contents depends upon the degree of success we have in arousing these centers to functional activity. Our success in that effort depends not only upon the condition of these centers, but upon the manner in which we attempt to approach them.

It appears that many of the agents causing disease in the human system exert a peculiarly sedative influence upon the nerve centers presiding over the motor activity of the intestinal canal. As a consequence, deficient peristalsis, manifesting itself in deficient alvine dejections, is an early symptom of almost all diseases. This may or may not be accompanied by deficient secretion; but no matter how abundant secretion may be, if the motor centers are so blunted as to have their

activity suspended and, to be insensible to impressions conveyed to them, the intestinal tube becomes an inactive, motionless mass which effectively imprisons its contents.

In the treatment of disease, if we undertake to restore motor activity to the intestinal tube, we have four classes of agents which we may employ, or four modes of procedure at our command. By two of these we can stimulate the nerve centers directly; the other two, indirectly.

Direct stimulation of the motor centers, if sufficient, arouses all the cells in such centers to activity. As a result of this activity, secretory and motor impulses are generated and transmitted to all the structures deriving their nerve supply from such centers. *On the other hand, indirect or reflex stimulation of such centers, unless very extensive, only arouses a part of the cells composing these centers to activity. The motor or secretory response to such stimulation is local and not general.* That this statement may be more clearly understood, I will advance this proposition:

The same law governs the generation and transmission of reflex motor impulses that governs the circulation of the blood. "Where there is an irritation, the blood will flow." Corresponding exactly to this, when the terminal filaments of the motor nerves distributed to any particular structure are irritated, that impression is transmitted to the centers. In response to this, motor impulses are generated and transmitted to the structure from which such sensory impression came, but to no other structure.

The action is essentially local. In other words, "The effect of a given sensory stimulus is manifested only on a limited and practically constant number of motor nerves." *If the sensory impression is made upon the nerves of a limited area, the motor impulse generated in response*

thereto will be reflected to correspondingly limited area.

Much attention has been given to agents which stimulate secretion, and the individual peculiarities of these agents have been carefully studied, but little attention seems to have been given to the means of exciting the other function concerned in intestinal activity. It is well known that deficient peristalsis retards bowel movements, and that if peristalsis is entirely suspended no movements occur, but little practical use is made of that knowledge. Our entire therapeutic endeavor seems to be directed to the *stimulation of the secretory function* while little, if any, attention is given to the *other essential function*, the motor activity of the intestinal tube. The almost universal rule is to administer secretory stimulants (chemical irritants) and to trust to them, or to some vaguely defined or altogether unknown agency, to arouse the activity of the other essential function.

It is true that remedies which excite intestinal secretion do also stimulate motor activity of the intestinal tube, but the manner in which they do this is so inefficient and so poorly corresponds to the time at which such function should be active, that it seems quite unreasonable to depend upon such an agency for the production of so important a factor.

The four modes by which the secretory and motor activity of the intestinal canal and of the glands emptying their products into it, may be artificially induced are: Chemical stimulation, Mechanical stimulation, Electrical stimulation, Physiological stimulation.

CHEMICAL STIMULATION.

Chemical stimulation is the method almost universally employed, therefore we shall first consider the action of this class of agents and the difficulties encountered in their employment, also the objections which exist to their being depended

upon to stimulate the motor function of the bowel.

Let us see with what difficulty these agents accomplish this dual result. Take, for example, the cholagogue cathartics. These cause a free flow of the biliary secretion. This secretion is poured into the duodenum, and there it comes in contact with the terminal filaments of the nerves distributed to the intestinal mucosa to which it is a chemical irritant, but it can only stimulate these nerves as it is brought in contact with them. When motor activity of the tube is suspended many difficulties lie in the way of its being distributed throughout the length of the tube. Instead of the small intestine being a straight patulous tube through which its contents can readily pass, it lies in numerous convolutions, and at many points a short bend in the tube completely closes its lumen.

If peristalsis is suspended, this effectively blocks the downward passage of the intestinal contents, thus confining any quantity of hepatic secretion which may have been induced by the action of cholagogue to the duodenum and such segments of the jejunum as it may have been able to reach. If this secretion is abundant the obstruction to its downward passage causes over distension of that part of the tube which it first reaches and in which it is confined. All the sensitive nerves supplying this part send up repeated sensory impressions, and the reflex response to these at times amount to spasmodic contractions. These violent muscular contractions mechanically irritate the sensory nerves passing through or terminating in their fibers. This mechanical stimulation augments the already powerful chemical stimulation existing in the part. These, acting together, cause violent contractions of the tube, and these contractions force the contents both upward and downward. If the segment which is thus

irritated be near the stomach, bile and other intestinal contents are forced up into the stomach. If lower down, these contractions straighten the bend in the tube immediately below this segment, thus allowing the contents to pass downward to another segment of the tube. It is here again arrested and held until the irritation caused by its presence reflexly, stimulates this segment of the tube to such degree of motor activity as to straighten the bend at its distal end and thus permit the further downward passage of the intestinal contents. This phenomenon is repeated, segment by segment, until the chemically irritating intestinal contents have gradually but with difficulty worked their way through the entire length of the tube, and then, but not until then, does evacuation of intestinal contents begin. It is evident that *since local irritation begets only local motor activity*, in order to arouse peristalsis extending throughout the entire length of the tube the chemical irritant, upon which we are depending to stimulate such function, *must be distributed throughout the entire length of the tube*. When the motor centers are profoundly lethargic, resulting in entire suspension of peristalsis, *this is a physical impossibility* except by the tedious and difficult process above described.

MECHANICAL STIMULATION.

Massage of the bowels is another indirect means of stimulating the motor activity of the intestinal tube, but since in practicing massage the hands of the operator are free to move at will, a large portion of the surface of the tube may be stimulated simultaneously, thus sending sensory impressions from almost the entire length of the tube. These impressions are responded to by motor impulses transmitted to a correspondingly extensive area of surface. While this is a reflex phenomenon, these responses are transmitted in such numbers and to such an extent of sur-

face that they throw the entire tube into a fair degree of motor activity, resembling, to a considerable extent, peristaltic waves generated by the centers when acting normally.

In describing reflexes the older physiologists had in mind only reflex movements, but at the present time, physiologists are agreed that the reflex act effects not only the muscles, voluntary, involuntary, and cardiac, but also the glands. We have, therefore, to deal with reflex secretion as well as reflex motion. It should be borne in mind that by massage of an organ supplied with secretory nerves the impressions made on their different branches are converted into secretory impulses, and these are transmitted to the organ from which the irritation came along with such motor impulses as may be excited by the massage. Secretion and motion thus excited is distributed throughout the entire length of the intestinal canal, no part of the tube being over stimulated while other parts are unreachd.

Massage, either by the hand of a masseur or by an electric vibrator, is a therapeutic measure which can hardly be overestimated. It can be used with the most happy results in connection with other measures.

Another form of massage, much less positive but none the less valuable as a health measure, is deep breathing, forced abdominal respiration. One who would preserve his health and keep himself in the best working trim will find this an invaluable aid if faithfully practiced. The best results are obtained by devoting fifteen to twenty minutes to the practice of this exercise immediately after retiring at night. It should be carried out as follows: Lay on the back, with limbs straight, or on side, with the knees drawn up, then by voluntary efforts fill the lungs to their utmost capacity, until the abdominal muscles are forcibly distended. Hold

this position about ten seconds, then expel the air from the lungs, at the same time *forcibly contracting the abdominal muscles*. Repeat this at each inspiration until fifteen to twenty minutes have been devoted to the exercise. This alternate forcible distension and contraction of the abdominal walls changes the relation of all parts of the intestinal canal to each other, thus distributing and mixing the bowel contents. This mixing of the intestinal contents promotes the normal chemical changes, and these new compounds (nature's stimulant) induce, reflexly, both secretion and motion, and the result is more complete evacuation of the waste products.

The mental concentration incident to the successful carrying out of this exercise exerts a most favorable influence upon the function we are seeking to promote. Forced abdominal respiration is a voluntary act, and in order to carry it on successfully, the attention must be concentrated upon it to the exclusion of all other things.

Mental states greatly influence vital functions. Anxiety, fear, grief, excessive mental activity, impair digestion, secretion, and excretion. Conversely, concentration of the mental faculties in an effort to promote bowel movement, even for so short a time as fifteen minutes, *involves the cessation of damaging states*. The surcease thus afforded, the relaxation and response accompanying it, give a lethargic function a chance to become active.

In many instances the mental concentration incident to the practice of massage by forced abdominal respiration proves to be hypnotic to such a degree that, before the fifteen minutes' exercise has been completed, the subject is asleep. The sub-conscious mind simply having taken control while the conscious mind was intently concentrated upon the promotion of a vital function. The next morning a more

satisfactory bowel movement occurs. Is not such a result worth while?

ELECTRIC STIMULATION.

The motor centers can be stimulated to functional activity by electricity. While this is theoretically true, I do not believe that electric stimulation can be used to much advantage.

DIRECT PHYSIOLOGICAL STIMULATION.

In health, when the nerve centers are acting normally, motor impulses are *generated and rhythmically transmitted* to the abdominal viscera. This is manifested in the intestinal tube by waves of peristalsis setting in at the pylorus and extending throughout the entire length of the small intestine. These waves amount to a worm-like motion by which every part of the structure of the tube is changed in its relation to other parts.

The uniformity and strength of these motor waves depend upon the state of activity of the nerve centers. If these centers become lethargic, these waves are less distinct; if they are profoundly blunted, they cease altogether. In disease they are frequently in this inactive state.

We have considered three of the methods by which this inactivity may be overcome, but the fourth, which is by far the most valuable and efficient, is now to be considered.

The functional activity of the intestinal tube depends upon the nerve centers. If these centers are inactive, the motor activity of the intestinal tube, and the secretory activity of the glands emptying their products into it, are correspondingly impaired or suspended.

In attempting to remedy such a disordered condition, our first effort should be, as far as possible, to restore these centers *to a state of responsiveness*. If these centers have become exhausted from over-excitation than sedatives, motor depressants should be given; if the suspension

of their activity is due to the sedative effect of some morbid poison, then remedies which will directly stimulate the motor centers should be given.

It should be constantly borne in mind that to secure evacuation from the bowel, it is equally as necessary to stimulate activity of the motor function of the tube as the secretory function of the glands.

The bile is probably the normal stimulant of the intestinal motion, and substances used as cathartics doubtless act in the same way. These substances irritate the terminal filament of the motor nerves distributed to the intestinal mucosa.

This irritation is transmitted to the centers, and there motor impulses are generated and reflected to the point from which the irritation came, and in this way that part of the intestinal tube is set in motion.

If complete paralysis exists, of course no amount of irritation will excite motion. Where paralysis is only partial, or where the centers are benumbed by disease, or, have their sensibilities reduced by powerful sedatives, a higher degree of irritation is necessary to induce peristalsis. Agents which excite peristalsis by irritation of terminal nerve filaments are frequently incapable of exciting such action *unless these centers are brought into a state of responsiveness by direct stimulation*.

The intestinal fluid may be an irritant to all parts of the mucus membrane which it reaches, but as the tube lays in numerous folds, if motor activity is impaired, its passage downward is much delayed. Until it has been distributed downward to a considerable extent, enough of the surface is not irritated to cause peristalsis throughout the entire length of the tube.

In my experience there are few conditions which make it best to do indirectly what can be done directly. It seems unreasonable to depend upon so inefficient and uncontrollable an agency as reflex

irritation to induce peristalsis when it can be excited to any degree desired, and, at the time it is needed, by stimulation of the motor centers with strychnia.

Physiologists teach us that waves of peristalsis set in at the pylorus and extend down the entire length of the tube. This is doubtless true in health since *these waves originate because of the normal activity of the motor centers* and are transmitted throughout the entire length of the tube, but when the bio-chemism of the motor cells is interfered with by toxins these normal waves cease or are much less pronounced. In this condition if it is sought to excite peristalsis by introducing irritating substances into the intestinal canal, that part of the canal to which the irritant is applied will be first thrown into action. The contraction of the tube thus induced urges the irritant downward with greater or less speed, but as these substances make their impressions upon each section of the tube only as they reach it, and as the motor impulses called out by this irritant are reflected only to that part of the tube from which the irritation came, *the tube is not* thrown into motion as a whole or at once, but section by section, and only as each section receives motor impulses transmitted to it in response to impressions made by the irritant upon the nerves of that particular section.

Strychnia is an excito-motor stimulant and has an electric action for the involuntary or unstripped muscular fiber, and as the muscular coat of the intestine is composed of this class of fibers, the entire length of the intestinal tube can be thrown into motion by direct stimulation of the motor centers by this drug, without materially affecting the voluntary muscles. Peristalsis induced in this way corresponds exactly with that of health—that is, it occurs because of the artificially induced *activity of all the cells in the motor centers* controlling this function, and

motor impulses generated in response to this artificial stimulus are transmitted in a uniform degree *to all the structures that would receive them if the centers were acting normally.*

The quantity of strychnia required and the frequency of administration depend mainly upon the degree of lethargy or insensibility of the nerve centers, but when strychnia is administered in sufficient quantities and at proper intervals active peristalsis can be excited and kept up as long as desired, provided the nerve centers are in condition to respond to any kind of stimulation. If strychnia be administered with mercurial or other secretion producing agent, *each does its part of the necessary work* in bringing about the conditions essential for normal evacuation of the bowel. The intestinal canal throughout its entire length is thrown into normal or hyper-normal motion by stimulation of the motor centers by strychnia. By increasing the irritability of the motor centers, this agent brings those centers into such a state of sensitiveness that they readily respond to any peripheral irritation brought to them. In this way reflex stimulation is made to more effectively augment direct stimulation. As soon as the secretion producing agent begins to pour its product into the intestinal canal, this secretion, and other intestinal contents, are gently, gradually, but certainly carried downward, thus bringing the chemical irritant into contact with more extended surface of the intestinal mucosa. There is no over distention of the bowel at any point, no retrostalsis, vomiting, colic, or other distress.

In other words, *the conditions essential to normal evacuation of the bowel* have been in reality artificially induced, but *no more distress or other discomfort accompanies the act* than if no artificial means had been used in its induction.

A purgative should never be given on a

full stomach. If the demand for its effect is so urgent that there is not time to wait until the stomach empties itself, then an emetic should be given. Beginning with an empty stomach removes one of the causes of nausea, vomiting, colic, etc., and does much to overcome the objections to the use of purgatives.

The remedy administered acts as a purgative because its chemical or physical properties are such as to render it unfit for use as an article of nourishment. These chemical or physical properties render it unacceptable or repulsive to the system—an irritant. Because of those irritating or unwholesome properties, the "sentinels on guard" set up an active effort to eliminate it, or its products.

The admixture of such an agent with the stomach contents renders the entire mass unacceptable for assimilation, therefore it must be thrown off either by vomiting or be passed through the intestinal canal as waste. It is either voided from the stomach *en masse*, or passed precipitately into the small intestine where it greatly encumbers that organ and causes unnecessary suffering.

Again, such a bulk of matter in the stomach interferes materially with the prompt and complete absorption of the remedies given, thus delaying, or rendering uncertain, their action.

The first meal after the purgative should also be a very light one. After the action of a purgative, even after all discharges from it have ceased, the digestive tract is more or less enervated and disturbed, therefore it is not in condition to undertake the digestion of a full meal. If a full meal be taken at such a time, it will greatly lessen the good effects which would otherwise have come from the action of the purgative.

In conclusion, I wish to say that it is a serious error to administer an active secretory stimulant without at the same time making efficient provision for stimulation of the motor function of the intestinal canal. Except in a few rare conditions, *motor activity is always as greatly impaired as the secretory function*. Since each of these is essential to satisfactory bowel movements, the efficient stimulation of each should be provided for in every purgative compound.

THE STATE SANITORIUM IN THE PREVENTION AND CURE OF TUBERCULOSIS.

DORA LEE WILDER, M.D.



It is my purpose in presenting this paper to bring before you the relation of the State to one disease, "the great white plague."

It is the duty of the State to protect the lives, health, and property of its inhabitants, and at present it does protect them from all other infectious and contagious diseases, save tuberculosis.

Let one cry "yellow fever," and every citizen, from the Governor down to the humblest laborer, are up in arms, even the

military authority, and frequently the national government, are employed to check the invader.

Let smallpox develop, and the most rigid quarantine is practiced. We do this because it is a menace to our health, our lives, our trade, yet I say to you that tuberculosis is greater than either of these!

It is much more deadly to ourselves and our commerce, yet we have harbored this vicious trouble for centuries.

It is a disease older than tradition. The

very earliest writings, both Greek and Egyptian, give vivid descriptions and we know that the tubercle bacillus has been found in the lungs of the most ancient Egyptian mummies, and doubtless we would find that our forefathers, while they were still tree dwellers, were afflicted with this trouble had we any means of demonstrating the fact; so from prehistoric times we have sheltered and nourished this death-dealing organism, saying, "There is no help for it; it must be borne."

But the day of awakening has come!

The progress of scientific investigation during the past decade has been phenomenal, and in no field has the success been greater than in tuberculosis, and a disease which for so many centuries was considered incurable has been clearly proven curable, and greater still, preventable.

In the face of this knowledge, can we as a nation allow it to cost us two hundred thousand lives in one year and wealth untold? It is presumed that an individual can produce \$100.00 per year in excess of consumption. Now, those who are good in mental arithmetic can calculate the loss.

This statement is alarming, could it possibly be true. I quote as my authority Ex-President Roosevelt, in his address of acceptance as President of the International Congress on Tuberculosis at Washington last fall, and S. N. D. North, Director of the Bureau of Census, says this is a very conservative estimate.

"Of course," you say, "this applies to the nation at large, especially California, Colorado, Arizona, and North Carolina, where the mortality is very high." Yes, they congregate to die in those States, but Tennessee does not escape. At present, we have two million people within our boundary lines, and one-tenth of them, or two hundred thousand, will have tuberculosis, the death rate being over three thousand per year.

When the economic activities of the individual cease, the usefulness of the citizen to the State is at an end, and I ask you if the State of Tennessee can afford to lose so many tax-paying units, to say nothing of the misery, hardships, and bitterness that is left in the wake of this financial loss. Can we afford to offer up this annual sacrifice when the general adoption of preventive measures and their intelligent enforcement will gradually reduce this fearful mortality, and in due time stamp out the disease?

We must do something to remedy this evil, but what?

In the old days, without regard to the circumstances of the patient or the stage of his disease, change of climate was freely prescribed; and the hopeful sufferer found himself in a strange land, surrounded by persons to whom his fate was a matter of indifference. He too often recognized in those who ministered to his comfort individuals who performed ungraciously for hire, services which in the home he had left would have been cheerfully rendered through affection. The human wrecks scattered over the desert wastes of the great Southwest bear witness to this, as well as the many wanderers seeking health in the mountain wilderness of distant States, struggling for the mere necessities of life with death as an inexorable companion.

To those people and many people of wealth, climate with its exhilarating influences of dry air, blue sky, and bright sunshine is but a "will o' the wisp."

The pendulum has gradually swung from the old teachings to the new, directed through the influence of the pioneers in medicine, and today it has been beautifully demonstrated that tuberculosis can be successfully treated and cured in any State in the Union!

What a wonderful paradise this opened to those so poor they could not seek the

distant climes and to those who did, and often found, when cured, they must remain far from home and friends if they would preserve the health they had secured under such disadvantages as financial loss and great heart hunger.

It began to be shown that in these health resorts that the patients who were taught to live careful sanitary lives made the most improvement, and private institutions sprang up everywhere with a high-priced specialist in charge, but the little brothers of the rich could not avail themselves of this, so they stayed at home indoors, expectorating where they would, and finally dying, but not before they had infected the family and friends.

The laity must be educated to their danger, and the center of this education must be the sanatorium. The high-priced private institutions for the rich—they can pay for their privacy; but for the poor a State institution, properly kept, well managed, and absolutely freed from political influence; this will control discipline and educate the individual.

At an institution of this kind the destitute from the great centers of population can find a home where they will receive proper treatment, where by means of segregation and careful supervision the danger of infecting others may be eliminated, and where attention to detail may restore them to lives of activity and usefulness—enabling them to go forth as missionaries, as it were, in matters pertaining to personal hygiene and the art of proper living.

The sanatorium idea is prevalent everywhere now, and we must not fail to give credit to Alonzo Clark, that pioneer in science who advocated the sanatorium over fifty years ago; also Bondwitch, who brought out the pernicious influence of insanitary surroundings on the production of tuberculosis.

State control and the hospital method are ideal; after a hundred and twenty

years they have freed Havana from filth and disease, and the application of the laws of hygiene and sanitary science to the infected canal zone at Panama will reveal to the world the possibilities of modern medical science, and so with the tuberculosis problem, it must be solved in the hospital and sanatorium.

As accessory to this central institution may be mentioned model free dispensaries, open-air camps, information bureaus and lecture departments—coöperating with the sanatorium under supervision of the State.

The sanatorium bears a most important relation to the tuberculosis problem in the study of the economical course of consumption, especially the wage earners. This phase of the disease does not, however, present itself until the earning capacity of the individual ceases and he passes from a period of partial disability to one of complete disability with dependency.

It was stated that of 177 wage-earning males, among whom careful inquiry was made concerning the original and ultimate economic condition, 72, or 40 per cent, became dependent on charity, and during the course of their disease 26, or 14 per cent, died in charitable institutions, and it was supposed that the majority of the others received charitable aid at some time during their illness.

Under our present regime there is no place they can obtain aid unless it be the poorhouse, where they flock only to infect the other helpless inmates, who, up to this time, have escaped the ravages of the disease.

Tuberculosis is a house disease, as the statistics from State prisons, soldiers' homes and, in fact, any institution where humanity is segregated, and as this is true, surely there is no argument necessary to demonstrate the need of a State sanatorium, where inmates can be educated

to protect themselves and others without inflicting the disease on a lot of helpless paupers.

After all, self-protection is one of the chief reasons for an open-air State sanatorium.

A careless consumptive is a source of constant danger to the people. He is permitted to go where he pleases, spitting at will in the street cars, the railroad train, public buildings and the dust heap in the street, leaving contagion lying in wait for all that follow in his pathway.

The prevention of tuberculosis is one of the most serious social problems that the country has to deal with, and the first movement toward the solution of that problem must be made by the medical profession.

One of the first moves should be the appointment to our State, city and county boards of health men scientifically equipped to deal with this disease, and energetic men who will keep vigilant watch over the public health, fearless, aggressive men, who will start a campaign against ignorance and the indifference which arises through ignorance.

The second should be the appointing of a Tuberculosis Legislative Commission, men brave enough to stand against the opposition such a movement is sure to make.

The sanatorium in the crusade against tuberculosis has passed the experimental stage; the results achieved through persistent effort and honest endeavor on part of the profession justify the co-operation of the laity through the medium of the State legislature.

The first sanatorium to be erected by the State for the treatment of tuberculosis was established at Gravenhurst, Ontario, in 1897.

The success of this institution resulted in another building two years later, and since then there has hardly been a geo-

graphical division in our union of States that has not been interested in the erection of a free hospital or sanatorium for the treatment of tuberculosis patients.

Massachusetts was the State to lead the way in the adoption, as a public enterprise, of methods which had been successfully applied in Canada.

In 1899 they established their State institution, and they report as high as 76 per cent of arrested cases of incipient tuberculosis.

Boston was the first city in the country to have an open-air camp for poor patients, and their Emanuel Church Class for treatment of poor people at home is doing wonders for the poor of Boston that cannot be accommodated by the State hospital.

The New York State Sanatorium is at Bay Brook, but for only incipient cases, and they report 52 per cent cures.

Colorado has a large free institution, but it is a memorial hospital and kept by private endowment from Lawrence C. Phipps for his mother. There is a Jewish hospital at Denver, open to any poor sufferer of that faith who may drift to its doors.

Maryland and New Jersey have their institutions, and the United States has its hospital for tubercular soldiers at Fort Bayard, New Mexico.

Indiana has the appropriation for a sanatorium and the site bought at Rockville.

Pennsylvania has its free hospital, but not until the good Quaker folks realized that tuberculosis caused them a loss each year of twenty-four million dollars.

Are we going to be behind all other States? A country as rich in its natural resources as Tennessee should lead the van in advanced thought and progress.

State institutions are costly. All the above mentioned have cost from one hundred and fifty thousand to two hundred

thousand dollars, but they have more than paid for themselves by returning to the commonwealth able bodied citizens.

There are a good many points to take into consideration besides the cost of the building—healthfulness of the locality in which it is to be erected, altitude and salubrity of the air, with freedom from dust, fogs and smoke, purity and sufficiency in water supply, drainage, scenery and natural advantages, the building site, the presence of stone, sand and gravel to be used in building and road-making purposes; also the railroad conveniences.

I have in mind an ideal spot for an institution of this kind; altitude enough to enable the patients to be comfortable the year through; the good railroad connection, on a direct line East and West; natural resources—coal, timber and limestone; natural drainage and sufficient water supply; a place that could be obtained very cheaply at present, and when we reach the stage of an investigating committee I hope they will be so impressed with the natural advantages that they will locate the building at Monterey, Tennessee, on the Tennessee Central Railroad.

It's a far day to that day, yet it must come.

The people of Tennessee are opening their eyes to their very real peril—not a black or yellow one, but a general one—as well as the value of an institution of that kind would become.

They will realize that the prolongation of life from a prevented disease is of much greater value to the State than the cost of the means employed.

They will realize that a magnificent commonwealth like Tennessee can and must arrest this fatal procession to the grave.

When our voting citizens do realize this, they will throw off the spirit of commercialism, which measures human life

against dollars and cents, and put on the spirit of defense.

When we have attained this end in our crusade against tuberculosis, much of the sorrow will be forever banished from thousands of afflicted homes and the night of our tears turned into a day of hope.

God speed the day when every tubercular patient within our borders may find a haven of rest in a well equipped sanatorium.

DISCUSSION ON THE PAPER OF DR. WILDER.

DR. DEERING J. ROBERTS, of Nashville:

Mr. President: First I want to thank the Secretary for selecting me to open the discussion on this paper. I did not know it until until yesterday, when my attention was called to it by Dr. Marable, of Clarksville. I desire to express my regret, however, when so admirable a paper has been presented here, so opportune, couched in such chaste language, and with such logical reasoning, that a more eloquent colleague, like my friend, Witherspoon—one gifted with more poetic vision like yourself—had not been selected to pay proper tribute to our lady colleague.

This subject is one that is of no little interest to me. For three years as your Secretary I worked along this line in trying to get this Association thoroughly imbued with the necessity for certain action in regard to tuberculosis. However, I have more hopes now than I have ever had before. Not only are the ladies of our land taking the matter in hand, but those who are honoring the profession of medicine have taken the trouble to come here and bring this subject before us. What they take hold of must succeed.

A point I brought before the Association at the last meeting in Memphis was the necessity of State sanatoria. You will recall we had a general meeting there, or a symposium, on this subject. I made a few remarks, and at the close of them offered a resolution. We had with us then the Episcopal Bishop of the Diocese of Tennessee, who stated that the resolution I offered had meat in it. That resolution I shall submit again at this meeting. I took the ground then that there are certain things in connection with tuberculosis that belong to the individual and to the individual physician. In other words, the physician has his work to do in the care of individual cases. There is cer-

tain other work to be accomplished by the municipality alone. There is certain work that can be accomplished by the State, and State alone. Finally, there is a certain work which belongs to the national government. I advocated then the establishment of three State sanatoria in this ribbon-like State. As the essayist has stated, it has been demonstrated that there is no State in the Union in which tuberculosis cannot be treated. Sanatoria are suitable for any State in the Union, and no State possesses greater advantages than our own. I care not what you say about Colorado, about high altitude and dry climate, or the balmy climate of Florida and of Southern California. They may possess some advantages, but we have advantages in this State that can be utilized, and can only be utilized by State supervision and State assistance.

The resolution I should like to offer before the general meeting, I can briefly state in a few words. It is looking to the future. It is looking ahead. We must look ahead. The present General Assembly will soon adjourn, as there are only a few days more left, and as our law makers have a multiplicity of business to transact. I am not hopeful now of anything more than a starter. I am looking forward to the General Assembly that succeeds this two years hence. Those are the fellows we want to reach. (For resolution, see minutes of General Meeting.)

It is just as important to care for tuberculous cases by State aid as it is for insane patients. Why do we care for insane patients in our State institutions? Because we cannot care for them individually or by local means. We must invoke the great aid of the State. We have property invested in this State to the extent of a million or more dollars, with an annual appropriation to each of our three institutions of about forty thousand dollars, making more than one hundred thousand dollars a year. With the same amount of expenditure per annum, with not so much for buildings and for sanatoria, as such a great expense would not be required, in ten years we would see far more beneficent results in the protection of our people, our wives and children, from this dread disease, as well as the advantage we give to the State in restoring to health those who are at present rapidly passing away. Each individual is worth so much. Tuberculosis in its most fatal form, namely, that of the pulmonary type, lays its frightful hands upon a young man or a young woman just as he or she reaches the profitable

years of life, right where the expenditure has been going on to produce productive human beings, then comes in the great White Plague and says: "To the other world, hence." Let the State save these lives. Every life is said to be worth at least a thousand dollars a year. Arguments could be presented to show that the average legislator will listen to us if we go at him in the right way. With the bill formulated by three members of this Association to be presented here next year, and amended, if need be, by the Association, and the following year sent out to each county through the State; if every member of this Association would simply go to the successful candidate, or go to any one of the candidates, if he is a Democrat, he can say to him, I want you to do so-and-so. If the legislator is a Republican, and elected by Republican votes, he will be very apt to support a bill formulated by this Association, and help to carry it through.

DR. JOHN A. WITHERSPOON, of Nashville:

This is a subject so close to my heart that I rise personally to thank Dr. Wilder for presenting it. There is not one word expressed in this paper that does not resound not only with earnestness, but has scientific knowledge behind it. The time has come, gentlemen, when this State not only should, but must, awaken to a realization of the fact that tuberculosis is the greatest menace to her population of all other combined affections known.

I am glad to say to this body that already there is a bill pending before the Legislature to appropriate forty thousand dollars with which to build sanatoria to take care of the State tuberculous poor. This question will come up in the next Assembly. While this amount is a mere pittance, it is a nucleus around which will grow one or more of the life-saving institutions of this country.

Seven years ago I read before the Nashville Academy of Medicine a paper in which I took the position that our only hope of combatting tuberculosis was to educate the people; that the unfortunate part was we met in convention and discussed a lot of theories which were all right with us, but we left the main affairs of this country out, and that was the great barrier to any good cause, namely, the people. I insisted that the only hope was well-written papers and well-written discussions, if necessary, published in the daily press of this country, which is, after all, the great educator of the people. If you would reach the people on this great question; if you would arouse them

to the fact that this disease is absolutely devastating the people of this land; if you would reach them not only through this body, but through the great educators of the people, the newspapers, the moral influence exerted properly is such that no man can stand in its way. This is the function of the press of the country. If we could arouse every newspaper in every county in this State of Tennessee, and put them on the right side of this question; if they are taught that tuberculosis is as preventable a disease as is any other infection; if we could educate them that the old time-honored view that tuberculosis is an inherited disease does not obtain today; if we could educate them in the fact that such a thing is not true; that the children born of tubercular parents may live and grow and develop into citizens of great worth, provided they are placed in proper environments, we would accomplish a great deal. We should try to impress on the people what Dr. Wilder pointed out, namely, that this is a housebred disease. It is in the household that it is cultivated; it is in the household where it grows. It is the infection of the home and the growing up of children in the midst of that infection is where the trouble lies.

Tuberculosis, notwithstanding it has claimed more victims than all the combined infections of the world, is still very common among us. As the essayist has said, everybody runs wild over a simple epidemic of yellow fever, with a three per cent death rate, yet tuberculosis can stalk abroad with its bony fingers, clutching at the heart of every young man and young woman, without any great commotion being caused.

It is assumed that our legislators have not been educated; that they are men like ourselves, who are not educated in some other phases of life. As doctors we are woefully ignorant of some things, the same as our legislators are of others. But I want to say to you that there is nothing confronting the medical profession in this State, or in the United States, that is comparable to this great question of educating the people of Tennessee in the building of sanatoria to take care of her tuberculous poor. The rich can take care of themselves; but if we are anything, we are our brother's keeper, and for the love of mankind let us see to it that we do our duty in trying to prevent this destroyer from thrusting its long and bony fingers into their vitals.

DR. S. S. CROCKETT, of Nashville:

There is one important matter I want to get before this body. Dr. Witherspoon has re-

ferred to it, as did also Dr. Roberts. The object of Dr. Wilder's address is to accomplish some definite plan.

When the International Congress on Tuberculosis met in Washington a few months ago, the delegates from the State of Tennessee met in convention in the city of Washington, appointed a committee, and asked the Governor to appoint a Tuberculosis Commission from this State, naming a number of professional men and laymen. The Governor appointed that Commission, and in conjunction with the State Board of Health they have drafted a bill that is now pending before the Legislature on the lines mentioned by Dr. Roberts. Much to our surprise and to Dr. Wilder's surprise, when this matter was mentioned to the legislators there was great rivalry as to which one should introduce the bill.

Now, if you will take enough interest to see your Representatives and ask them to get behind the Tuberculosis Sanatorium Bill, it will go through in the next ten days. There is a popular sentiment in the Legislature in regard to the passage of this bill, and I believe we have it within our reach if you will exert your influence. If every one of you will do that, we will accomplish great good for this cause.

I feel that I would not do myself justice if I did not join the other members in my high appreciation of Dr. Wilder's paper, and I wish to thank her for the graceful and eloquent manner in which it was worded and the feeling way in which it was put.

DR. W. G. FRIERSON, of Shelbyville:

I was in Washington during the meeting of the International Congress on Tuberculosis, and heard a number of papers from some of the most eminent authorities, particularly papers looking toward the prevention of tuberculosis, and I must say the paper of Dr. Wilder was surpassed by none of them. (Applause.) This paper covers the whole field, and it has been put in a way that is so comprehensive that I feel we ought and should take a hand in this effort.

You cannot appreciate the humiliation of a number of us who were representatives of Tennessee in that Congress. Every known tongue was represented. There was representation from every section of the world. Everybody was bent on one thing, the eradication, prevention, and cure of tuberculosis. You can well appreciate our humiliation when we were asked what we were doing in Tennessee in regard to

this matter. And that question was frequently propounded, What are you doing in Tennessee to prevent tuberculosis? We had to bow our heads and say: Well, we are going to do something, for really we have done nothing so far. We have practically nothing but an anti-spit law. As was the custom while in Washington during that Congress, there was no such term used as expectoration. It was anti-spit. Everything was referred to in that way, because that assembly was made up not only of some of the most eminent medical men, but of a great many illiterate people who were interested from selfish motives or standpoints, people who had tuberculous patients in their families doubtless, and they attended, hoping to grasp something by which they could relieve the sufferings of these individuals. It seems to me, if we are going to accomplish anything, we must narrow our work down to the few who are here now, and every individual must make an effort toward obtaining from the present Legislature the passage of a bill looking to the establishment of a sanatorium. If a sanatorium can be established in each grand division of the State we can hope for results. If we only succeed in the establishment of one sanatorium at present, let us try to make an effort toward securing additional sanatoria in the future. Let each one of us go to our several fields of practice and impress on those who come under our observation the importance of proper care of the tuberculous patients. I believe if we do that, the laity will come to our help in a way that we have not anticipated.

Dr. W. FRANK GLENN, of Nashville:

I have been very much interested in Dr. Wilder's paper, and endorse every word of it. While I have not the silver tongue of my friend Witherspoon, I fully and heartily agree with everything he has said on this subject.

I remember very well that in 1878, when I delivered an address to the graduating class, I said to the students that there was room enough in the profession for any man who would find either a prevention or cure for the great White Plague that stalked through the land broadcast. Today it is becoming realized. We have started a crusade. Let us gather force and keep it up. Let us push it, and never stop until we rid the world of it.

Dr. Wilder's paper was admirable. We should take care of the tuberculous poor in sanatoria. We should teach people how to live, and that it is not a good thing to shut out every particle of air, nor to shut out all sunshine. We should teach them to sleep as nature would have them do, and to ventilate their rooms at night, leave one window up, so that fresh air can pass through. Don't be afraid of sunshine, of pure water, and proper diet. I would emphasize the point that people should eat to live, and not live to eat. Eat what you should, and not what you like. Eat what nature requires to build up the physiologic elements of the system. People should be taught not to be afraid of fresh air, plenty of sunshine. God Almighty's pure air and sunshine never hurt anything. If we follow that plan, we will eliminate the cases that would go to the sanatorium, and we will have a robust, vigorous American people.



Journal, Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

ABSTRACT OF THE PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, SIXTIETH ANNUAL SESSION, ATLANTIC CITY, NEW JERSEY, JUNE 7-11, 1909.

The *Journal A. M. A.*, June 19, gives in full the proceedings of the House of Delegates at the recent Atlantic City session. The House of Delegates met in the Solarium of the Traymore Hotel on Monday morning, June 7, at 10.30, and was called to order by the first Vice-President, Thomas J. Murray, of Montana, who announced that the President, Dr. Herbert L. Burrell, of Boston, was not able to be present on account of illness. After the report of the Committee on Credentials and the roll call, the President's address was read, in which a number of matters regarding the organization and conduct of the Association were discussed. The address, with its recommendation, was referred to the Reference Committee on Reports of Officers.

Following the appointment of the Reference Committees, the report of the General Secretary was presented, showing that the membership of the American Medical Association on May 1, 1908, was 31,343 and on May 1, 1909, was 33,935. The losses during the past year have been as follows: Died, 290; resigned, 1,439; dropped for non-payment of dues, 484; dropped as not eligible, 290; names removed, not found by the postoffice department, 55; total, 2,558. The new members for the year have amounted to 5,150, making a net gain of 2,592. After announcing the interim committees appointed by the President and commenting on several features of the Association work, the General Secretary presented a review of the work of the last ten years, during which time he has served the Association as General Secretary. A comparison

of present conditions with those existing in 1889 shows that ten years ago the membership of the Association was 7,997. The membership today, as shown above, is 33,935, an increase of 25,938, or 424 per cent, being an average growth of 2,600 members per year. The following table shows the membership of some of the State societies ten years ago and today:

| | 1899. | 1909. | Increase. |
|----------------------|-------|-------|-----------|
| Colorado | 326 | 739 | 226% |
| California | 309 | 1,861 | 602% |
| Connecticut | 660 | 872 | 132% |
| Florida | 145 | 285 | 190% |
| Illinois | 515 | 5,265 | 1022% |
| Indiana | 1,561 | 2,587 | 165% |
| Iowa (Est.) | 684 | 1,850 | 270% |
| Kentucky | 500 | 2,231 | 446% |
| Louisiana | 458 | 1,069 | 231% |
| Michigan | 550 | 1,892 | 344% |
| Minnesota (Est.).... | 450 | 1,214 | 270% |
| Nebraska (Est.) | 400 | 863 | 215% |
| New Hampshire | 360 | 520 | 171% |
| New Jersey | 854 | 1,400 | 163% |
| Ohio | 885 | 3,962 | 450% |
| Tennessee | 400 | 1,377 | 344% |
| Texas | 297 | 3,100 | 1043% |

The figures are lacking for the total membership of the combined State societies in 1889, but in 1902 an estimate made by the Committee on Reorganization showed the total membership of all the medical societies at that time to be approximately 34,000. The combined strength

of the associations constituent to the American Medical Association is today 67,362. Another point of comparison instituted was in the matter of State journals. In 1899 not a single State association owned and published an official journal. Today there are nineteen, while a number of other States have recognized certain journals as official. Further comparison was also made regarding the increase in the effectiveness of the organization in county, State, and nation during the past decade, showing the progress that has been made along all lines.

The report of the Board of Trustees was presented by the chairman, Dr. William H. Welch, of Baltimore. The work of the Council on Pharmacy and Chemistry was strongly commended, the report stating that it is impossible to overestimate the value of the work done by the Council and that the physician is no longer dependent on the exaggerated, extravagant, and often untruthful and absurd statements of the advertising agent for his knowledge concerning new products and preparations, but may obtain the desired information from a trustworthy source which has no other aim than to make known the facts in the case.

The work of Dr. McCormack was endorsed.

The value and the importance of the American Medical Directory was considered and the statement emphasized that the directory should be regarded not primarily as a commercial enterprise, but as an effort on the part of the Association to supply the medical profession and the public with reliable data regarding the physicians of the country, and that it consequently should not be regarded as a source of revenue, but rather as an investment for the benefit of the profession and the public.

The principal recommendation of the Board related to the erection of the new building which has been made necessary by the constantly expanding work of the Association. The Trustees recommended that the House of Delegates authorize the construction of a new building at a cost of approximately \$200,000. The proposed building will be 61 by 120 feet, consisting of six stories and a basement, with walls sufficiently strong to add two more stories, if necessary. In concluding their report, the Board of Trustees called attention to the fact that this meeting closed the most remarkable decade in the history of the organization.

Mention was also made of the death of Dr. T. J. Happel, which occurred just before the Atlantic City meeting.

In reviewing the legislative work in the various States, a summary of the legislation pro-

posed, enacted, and defeated in the different States was presented, showing that the legislatures had been in session during the past winter in forty States and that the two most important matters had been the passage of the model vital statistics bill in Missouri and the effort to enact the Herbst-Shreve bill, regulating the practice of medicine in Pennsylvania. The work of the Bureau of Medical Legislation in preparing model bills for uniform State legislation on vital statistics, pure food and drugs, regulation of the practice of medicine, etc., was considered and the recommendation was made that the Committee on Medical Legislation be authorized to call a general conference to be devoted to the discussion of the essentials of a uniform medical practice act for adoption by the various States.

The report of the Council on Medical Education contained a summary of the work of the Council for the past year, special attention being given to the Fifth Annual Conference on Medical Education held in Chicago, April 5, 1909, at which the principal topic for discussion was the report of the Committee on Medical Curriculum. A large amount of most interesting and valuable statistical and tabulated matter was presented, showing the present condition of medical education in the United States. The report stated that in the last five years there had been much progress toward uniformity. Five years ago, only twenty State medical practice acts made provision for preliminary education; today, thirty-six have such a provision. Great advance has also taken place in the requirements for examination, the increase in the authority of the boards and the increased reciprocal relations between the various State Boards.

At the second meeting of the House of Delegates, held Monday afternoon, the report of the Committee on Ophthalmia Neonatorum was presented, giving a summary of all resolutions, communications, reports, etc., relating to the work of the committee, the members of the national Committee on Ophthalmia Neonatorum, consisting of one member from each State, the members of the committees of the various State medical societies, a tabulation of the replies to a circular letter sent to the superintendents of schools for the blind regarding the percentage of blindness due to this cause, the progress of the campaign against this disease carried on during the past year, as well as a large amount of most interesting and valuable matter on the laws regulating ophthalmia in the various States as well as the laws regulating it in the

larger municipalities. The report of the committee is a most valuable one as showing the present condition of legislation and public opinion on this subject.

The report of Dr. J. N. McCormack, of Kentucky, chairman of the Committee on Organization, was presented, reviewing his work for the past year and emphasizing the possibilities of such work before educational bodies and schools and especially in institutions which are engaged in preparing teachers, editors, lawyers, clergymen and other leaders of public opinion for their life work.

The Committee on Scientific Research recommended grants of \$200 each to Drs. Isabel Herb, of Chicago, H. T. Ricketts, of Chicago, and R. M. Pearce, of New York; also a grant of \$200 each to Drs. D. J. McCarthy and M. K. Myers, of Philadelphia. The committee asked for an appropriation of \$1,000 for the coming year.

The Board of Public Instruction on Medical Subjects reported progress.

The report of the Committee on Nomenclature and Classification of Diseases, appointed last year, submitted an exhaustive report giving the specific recommendations of the committee as well as the recommendations of the Committee on Vital Statistics of the American Public Health Association, showing the changes advised in the international classification of the cause of death.

The Committee on Patents and Trade-marks reported progress, and asked to be continued for another year.

The Committee on Davis Memorial asked for an appropriation of \$5,000 on behalf of the Association.

The Committee on the Uniform Regulation of Membership submitted a lengthy report, tabulating the replies received from all of the State secretaries in answer to inquiries regarding the provision of their by-laws and the methods employed in regulating membership in each of the State societies. After summarizing the reports received, the committee stated that the present lack of uniformity and system in regulation of membership is costing the organized profession of the country thousands of dollars each year in the form of postage, clerk hire, stenographers' salaries, etc., in carrying on unnecessary correspondence, and stated that if a uniform general system were adopted by all county and State societies as well as the American Medical Association, it would result in an enormous saving of time and labor and, consequently, of expense to the organization. The committee recommended that all state associations be re-

quested to make their fiscal year conform to the calendar year and to instruct their component county societies to adopt the same rule.

After the presentation of a number of communications, resolutions, etc., which were referred to the appropriate committees, the House adjourned until Tuesday afternoon.

At the third meeting of the House, a supplementary report from the Board of Trustees was presented, approving the recommendation of the Committee on Scientific Research regarding the grants and awards made by the committee.

The Reference Committee on Medical Education reported, strongly endorsing the work of the Council on Medical Education and recommending the report of the Council to the careful attention of all members and especially to medical educators.

After the report of the Committee on Scientific Exhibit, the report of the subcommittee on Medical Legislation, appointed to raise funds for the relief of the widow of Major Carroll, was presented, showing that since January 18, 1909, \$6,267.84 have been subscribed for this purpose, leaving \$1,449.18 still to be raised.

The Reference Committee on Reports on Officers recommended the addition of two amendments to the by-laws in order to carry out the suggestion of President Burrell. The committee also recommended that the Trustees be given full authority to proceed with the erection of the new building. Both of these recommendations were adopted.

The Reference Committee on Miscellaneous Business recommended that the Association appropriate the sum of \$5,000 for the Davis Memorial fund, provided that the additional sum of \$20,000 be collected for this purpose within three years.

The Council on Defense of Medical Research reported that its work during the past year had been carried on along the lines: first, investigating the actual conditions of animal experimentation in the United States and the opposition to it; second, taking precautions against the abuse of animal experimentation and against misconceptions of the conditions and purposes of medical research; third, diffusing information regarding laboratory procedures and the results of laboratory study of disease.

At the fourth meeting of the House of Delegates, the report of the Committee on Sections and Section Work, changing the name of the Section of Cutaneous Medicine and Surgery to the Section on Dermatology, and that of the Section on Surgery and Anatomy to the Section on Surgery, was adopted. The committee

also recommended the appointment by the President of a special committee on anesthesia, comprising one member from each of the following sections: Surgery, Obstetrics and Gynecology, Practice of Medicine, Ophthalmology, Pharmacology and Therapeutics. The committee further recommended that a Section on Urology and Venereal Diseases be created whenever one hundred members of the Association petition for organization of such a section. These recommendations were adopted.

The Reference Committee on Legislation and Political Action emphasized the importance of the movement for the organization of a National Public Health Department as well as the adoption of the proposed amendment of the national food and drugs act prohibiting the use of benzoate of soda as well as other preservatives in the preparation and preservation of foods for interstate commerce. The committee also endorsed the provision for a general conference to be devoted to a discussion of the essentials of a uniform medical practice act.

The Reference Committee on Reports of Officers presented a supplementary report endorsing the recommendation of President Gorgas in his address before the General Session toward the erection in the national capital of a monument to medical officers who gave up their lives during the Civil War, and recommended the appointment of a committee for this purpose.

The report of the Director of Postgraduate Study showed that 200 county societies were now carrying on the postgraduate work, this number being double that of last year, 85 per cent of the societies which followed the course last year having taken it up again this year.

The Committee on Triennial Reappointment submitted a report showing the apportionment of members of the House of Delegates among the various constituent State associations for 1910-11-12. This report shows no changes in apportionment in forty States, with increase in the following cases: Illinois, 7 to 9; Kentucky, 3 to 4; Missouri, 4 to 5; Ohio, 6 to 7; Pennsylvania, 8 to 9; Tennessee, 2 to 3; Washington, 1 to 2; West Virginia, 1 to 2; a total increase of 9. In three States, the number of delegates was decreased as follows: Kansas, 3 to 2; Michigan, 4 to 3; North Carolina, 3 to 2, making a net gain over the apportionment of 1906 of six delegates. The composition of the House of Delegates for the next three years will be:

Members from the constituent State
Associations 133

| | |
|---|-----|
| Delegates from the Sections of the American Medical Association..... | 12 |
| Representatives of Government Medical Services | 3 |
| Total | 148 |

Dr. A. T. McCormack, of Kentucky, presented an amendment to the constitution authorizing the House of Delegates to arrange for the recognition of constituent associations lying outside of, but adjacent to the United States. Under the rules, it was ordered to lie over until next year.

The fifth and final meeting of the House of Delegates was held on Thursday afternoon, the first order of business being the election of officers. The following officers were nominated, balloted for, and duly declared elected:

President—Dr. William H. Welch, Baltimore, Md.

First Vice-President—Dr. Robert Wilson, Charleston, S. C.

Second Vice-President—Dr. Charles J. Kipp, Newark, N. J.

Third Vice-President—Dr. Alexander Lambert, New York City.

Fourth Vice-President—Dr. Stanley P. Black, Pasadena, Cal.

General Secretary—Dr. George H. Simmons, Chicago, Ill. (re-elected).

Treasurer—Dr. Frank Billings, Chicago, Ill. (re-elected).

Trustees—Dr. C. E. Cantrell, Greenville, Texas (to take the place of Dr. T. J. Happel, deceased); Dr. M. L. Harris, Chicago, Ill. (re-elected); Dr. C. A. Daugherty, South Bend, Ind.; Dr. William T. Councilman, Boston, Mass.

Following the appointment of committees and the election of associate members, the Reference Committee on Sections and Section Work submitted a supplementary report recommending that the name of the Section on Hygiene and Sanitary Science be changed to that of the Section on Preventive Medicine and Public Health. The report, with its recommendation, was adopted.

The Committee on Transportation and Place of Session reported that invitations had been received from St. Louis, Mo., and Los Angeles, Cal., and referred the matter to the House of Delegates for decision. On balloting, St. Louis was selected as the place for holding the next annual session.

After the presentation of a number of supplementary reports, resolutions, etc., the House of Delegates adjourned *sine die*.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., AUGUST, 1909

No. 4

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee Shelbyville.

C. H. DAVIS, M.D., East Tennessee Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D. Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan

GEO. H. PRICE, M.D. Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D. Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D. Covington.

Alternate, J. D. BREWER, M.D. Newbern.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman* Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

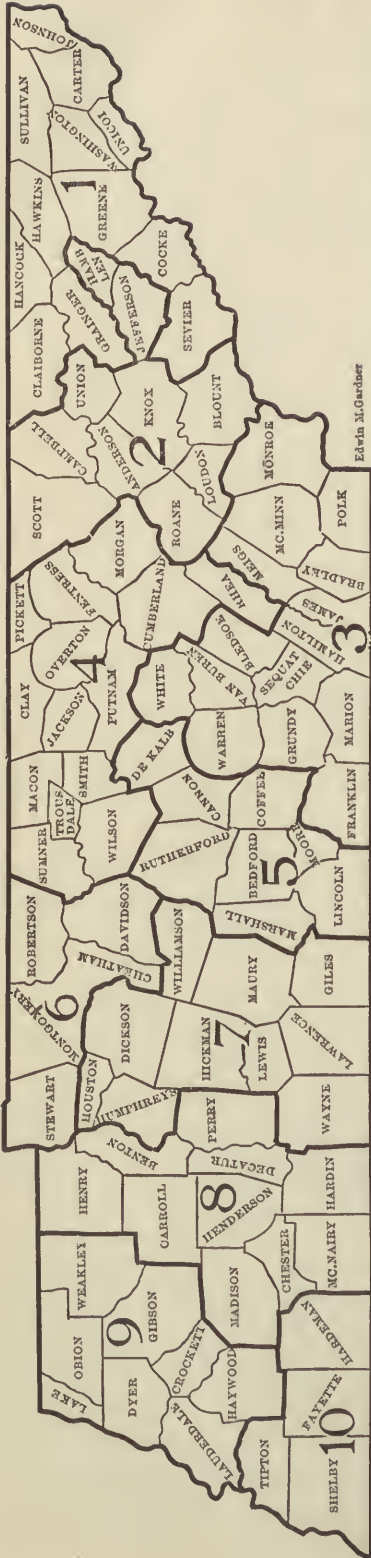
H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSON COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. MCKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. McREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Moshelm.
Secretary, S. W. WOODYARD, M.D.....Greeneville.

HAMBLÉN COUNTY.

President, W. E. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, S. B. FOWLER, M.D.....Gainesboro.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. McNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

MORGAN COUNTY.

President, ————
Secretary, G. R. TODD, M.D.Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabelia.
Secretary, A. W. LEWIS, M.D.....Copperhill.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. G. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, J. T. CARTER, M.D.....Erwin.
 Secretary, E. B. HOWELL, M.D.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., AUGUST, 1909

No. 4

REPORT OF SOME INOPERABLE TUMORS SUCCESSFULLY TREATED BY THE X-RAY.

W. S. LAWRENCE, M.D., MEMPHIS.



IN this paper I shall give considerable latitude to the term "inoperable." First, used in its strictest sense, it will cover those cases in which an operation would mean certain, or almost certain, death to the patient. Intra-thoracic tumors serve as an example of this class of cases.

Second, it will be used to refer to those cases in which recurrence has taken place after one, two, or more operations, and in which further operation is considered unadvisable.

And, third, it will mean those cases in which the site of the tumor is such as to render its surgical removal necessarily mutilating and disfiguring, and, therefore, extremely undesirable. Malignant growths about the eyelids, nose, and mouth are examples. Cases coming under each of these heads will be reported.

The first case is one of an intra-thoracic tumor. Of the number of men who have seen and studied this case, no one has been able to determine beyond the question of a reasonable doubt its cause and nature. I can, therefore, only present the case as it is, noting its history, progress, and final recovery.

The patient, R. A. P., Jr., is a white man of 40 years of age, at the head of a large business. The first sign of trouble was noticed in the summer of 1906, in the

form of an enlargement on the chest wall, just to the left of the upper end of the sternum. This continued to increase in size slowly, but gave absolutely no symptoms for nearly a year. Early in July, 1907, the patient consulted Dr. John Maury, complaining of general debility, pain in the chest, and a considerable increase in the enlargement on the chest wall. The iodides were given, but without benefit, the patient growing weaker, losing flesh and suffering much intra-thoracic pain.

On July 27, 1907, Dr. Maury brought the patient to me for an X-ray examination. The fluoroscope showed the whole upper central part of the thorax to be filled with a dense, black, non-pulsating mass about six inches in diameter. Radiograms made the same day record the correctness of the fluoroscopic findings. A probable diagnosis of sarcoma of the mediastinum was made and the patient was unloaded on Dr. A. J. Ochsner, of Chicago. Dr. Ochsner kept the patient under observation a few days, and rendered a diagnosis of rapidly growing dermoid cyst. To this was added a prognosis of death within a few months.

The next seven weeks were spent in Waukesha, Wis., and at Atlantic City, and during this time the patient gained somewhat in weight. The tumor, how-

ever, grew steadily, as was evident from the greater severity of the pain, the added frequency of the cough, and the increased bulging of the chest wall. September 15, 1907, Dr. W. B. James, of New York, was consulted. Dr. James made a diagnosis of sarcoma of the pleura, and gave a fatal prognosis.

On October 1st the patient returned to Memphis, and during October lost steadily in every way. X-ray treatment was begun October 30th. At that time the following conditions and symptoms were found to exist:

Upper central part of thorax filled with a tumor about six inches in diameter and somewhat denser than the heart. Heart displaced downward. Chest wall to left of upper part of sternum raised about one inch above level of other side. Supraclavicular space on left side filled level and even bulging. Much pain throughout thorax and back. A hacking pressure cough, which waked the patient many times through the night. A loss of 15 pounds in weight, from 150 to 135 pounds. Great weakness, distress and general depression.

At the beginning of treatment, large doses were given every day for four days, then every other day for about two months. In all, twenty-eight treatments were given. All the treatments were given through the chest wall, with the patient lying on his back, and all were given through heavy clothing, with the face and genitals screened. A heavy anode medium tube was used, placed at some distance, 12 to 14 inches, above the sternum. The time of each treatment was two to three minutes. The tube, however, was strongly excited, using about eight to ten amperes of a hundred and ten volt A. C. current through two layers of the primary of a Grosse Flamme coil.

Roughly speaking, at each treatment there was used about three times as much

Roentgen energy as is required to make a good hip picture in forty to fifty seconds.

Improvement was prompt and continuous. The patient was discharged symptomatically a well man at the end of two months. Here I will copy from my weekly notes:

October 30, 1907—Treatment begun.

November 6th—Patient says he is feeling better.

November 15th—Undoubted general improvement, and decrease in size of enlargement on chest wall.

November 22d—Great improvement, cough gone, patient slept all night.

December 6th—Improving rapidly.

December 13th—All external signs of tumor gone, no bulging of chest wall, and no difference in supraclavicular spaces on each side.

December 20th—Feeling fine; tumor as seen by fluoroscope about the size of an orange.

December 24th—The happiest Christmas ever.

December 30th—All symptoms gone, patient apparently a well man; treatment discontinued, but patient kept under observation.

The accompanying radiograms show that there is still a tumor of some size in this man's chest. However, it seems to be entirely quiescent and non-productive of symptoms. The patient has regained all of his flesh and practically all of his strength. Now, one year after treatment was stopped, he is leading a very active life and doing a great deal of horseback riding.

It is difficult to arrive at an exact diagnosis in this case. Possibly by exclusion we may come nearer than any other way; considering the favorable outcome malignancy may, I suppose, be excluded. Neither dermoid nor hydatid cyst would have been favorably influenced by X-ray.

treatment. The same may be said of lipoma and fibroma. There remains enlargement of the mediastinal glands, and enlargement of the remains of the thymus gland. Between these two the chances are, I think, about even. The enlargement may have been of tubercular origin, but with every known means of diagnosis exhausted, the truth of this could not be established.

It is rather odd to note that of the number of men who examined this patient, no one had anything to offer in the way of treatment, either palliative or curative, and not one suggested the X-ray as of even possible value.

It is of interest to note that while this patient proved very susceptible and came rapidly under the influence of treatment, his skin proved very resistant to the baneful influences of the ray. At no time during the course of treatment was there more than a suggestion of erythema, and now, a year later, the skin of this man's chest is, to the naked eye, absolutely normal in spite of the very heavy dosage he received.

The second case to which I would call your attention began as an endothelioma of the external auditory meatus, but later involved most of the tissue of the outer ear and parotid gland. The patient, Mrs. J. P. C., is a woman of 65, and the mother of a physician. The growth was removed three times—twice by Dr. Ellett and once by Dr. Malone. Recurrence was very prompt, however, after each operation. When the patient came to me first, about seven months ago, there was a large tumor in front of the ear, hiding it entirely from the patient's view as she looked into the mirror; another behind the ear about three-quarters of an inch in diameter, and a mass of glands and indurated tissue down the neck. There was great pain, for the relief of which the patient was taking morphine. My prognosis

was so bad that I did not even make a photograph of the patient in the beginning, and I undertook to treat her only because she is a doctor's mother and could not be refused.

Treatment was begun August 3, 1908. Within a week the patient was free from pain and had discontinued morphine. At the end of three weeks she came in one morning, saying: "Doctor, I can see my ear this morning." This patient has had treatment off and on from that time until the present. She has had several rests of three weeks, but for much of the past six months she has had two or three treatments a week. Improvement has been steady and continuous, with no tendency whatever to retrogression. At this writing, all of the glands in the neck have disappeared but one. The tumor behind the ear has gone away completely, while the one in front of the ear has been reduced from the size of half an egg to about the size of the end of the finger. There is no pain and the patient feels entirely well and hopeful.

As an example of that class of cases in which the cosmetic effect of an operation would be bad and where recurrence would be most likely, I will cite the case of Dr. B. Bartlett, Tennessee, who suffered with multiple superficial epithelioma involving the whole face, neck, and a part of the scalp. There were some twenty-five little ulcers varying in age from a few months to several years. One of these had extended to the subcutaneous tissue of the right cheek and formed at its base a mass of indurated tissue about one inch in diameter in each direction.

X-ray treatment was begun October 8, 1908, and has been continued at long intervals till the present time. At first, three treatments a week were given, then two, and at this time, one each week. The time of each treatment is from one to one and a half minutes. Improve-

ment was rapid and continuous. The tumor, which was our chief concern in the beginning, has been entirely absorbed. The ulcer overlying it healed completely during the first month's treatment. All of the smaller ulcers have also healed, but there is still some tendency to recurrence in the form of scaly patches about the face if the treatment is discontinued for more than two or three weeks at a time.

DISCUSSION ON THE PAPER OF DR. LAWRENCE.

DR. G. C. SAVAGE, of Nashville:

It seems to me there is as little room for doubt as to the value of the X-ray and radium as there is for doubting the use of antitoxin in a case of diphtheria. We know that failures from the use of antitoxin are very few, and while the failures from the use of the X-ray and radium are more than we would like, still the results in some cases are excellent. When we listen to such a paper as this from a man who has had a large experience with the X-ray, it ought to serve to impress us. Personally, I have had cases subjected to X-ray treatment and to the treatment by radium, but not of the same type that the essayist has referred to, and I have been gratified to see these patients whom I have turned over to Dr. Edwards improve rapidly and soon reach a complete cure. A majority of the cases I have turned over to Dr. Edwards for treatment by X-ray and radium have been cured, some of them largely because of the fact that the patients were faithful in their attendance, while others who were not faithful in their attendance failed to be cured.

I think we ought to feel grateful to Dr. Lawrence for bringing before us these inoperable cases, because they have been turned over to the fell destroyer, whose approach was being looked for early, and yet he tells us of the good that has come in these most desperate cases by the use of the X-ray. If in these bad cases good can be accomplished, particularly in those that are inoperable, why not give the poor sufferers who are not of that class the advantages that must come from the X-ray and the use of radium?

DR. JOHN A. GAINES, of Nashville:

I want to thank Dr. Lawrence for his report of these cases and to say, furthermore, I believe them. These reports, while they are astonishing in their results, yet I have seen many conditions in the hands of the same physician that Dr.

Savage has referred to, that were greatly benefited with the X-ray and radium, and while I am not yet prepared to believe that the X-ray is good for everything, there is no question as to its potent influence. Our opinions have been formed largely by the inefficiency of the X-ray, and especially from the fact that in our earlier work with the X-ray the technique was not nearly so perfect as it is at present, and we had many failures in treating conditions which now readily yield to the same line of treatment, only more thoroughly carried out. I simply rise to make that statement in regard to our preconceived ideas of what X-ray therapy will do when properly applied, and that we will have to reform our opinions according to the latter-day achievements by the improved instruments and improved technique of application.

DR. CHARLES N. COWDEN, of Nashville:

I have been doing some work with the X-ray for a few years, and I find that the field for this therapeutic agent has become rapidly enlarged as we become better acquainted with its application. A great many of these cases will yield to treatment by the X-ray in the hands of men who are doing this kind of work. Instead of turning over the inoperable cases to die, there is a field for this agent in these cases, cases of malignancy. The idea is prevalent today that before an operation has been done upon any malignant growth that offers hope of recovery, a reaction should be gotten in the tissues from the X-ray before the operation is performed, with the idea of strangling the infection, and when the tissues are devitalized there is no chance for the infection to spread and involve healthy tissues when you open up fresh surfaces.

The first case to which I applied the X-ray was one of inoperable carcinoma of the uterus. The patient was bedridden and the disease had advanced to the stage of violent hemorrhages. After the application of the X-ray every day for a week, the pain was entirely relieved, and the woman went six months without a hemorrhage. She lived for a year after the beginning of the treatment by the X-ray with comparative ease and comfort.

Another serious case that was greatly benefited was one following an operation for recurrent carcinoma of the breast. A Halsted operation was finally done. She had been operated on twice before she came under my observation. We went into the axilla and cleared it away. After getting up a reaction from the X-ray she was immune from symptoms for four months. The disease recurred before the wound healed

from the other two operations. The disease appeared in the form of multiple carcinoma of the scalp and back, and there were fifty or more localized lesions where the growth had returned. We applied the X-ray every day for an hour to this patient for fifteen days before we got any reaction. After that, in thirty days, the large nodules which appeared over the scalp had receded and the large indurated bases softened, so that now the woman is in a comparatively good state. She is not entirely cured. The application of the ray removed every hair from her head.

The reason the doctor does not get any burns from the ray upon the skin is because he uses a high penetrating tube. The softer the ray you use, the softer the tube, as it were, you use, the more reaction you get upon the skin. He used, I think, a Crooks' tube when applying the ray to the deeper seated tissues. You want to get the ray to penetrate deeply. The soft ray is obstructed by the skin or absorbed by it, and you get a localized reaction immediately. The softer the tube, the quicker you get a reaction in the skin. If you use a tube hard enough you will not get any reaction at all. You can use it indefinitely without getting any reaction at all, because the ray passes entirely through the tissues and has no effect on them whatever.

DR. J. M. KING, of Nashville:

I have used the X-ray for several years in my dermatological work, and, of course, while doing this work, several cases of inoperable cancer came under my care. Cases that cannot be operated on with any success can be relieved to a certain extent by the use of the X-ray. I know of several patients whose lives have been prolonged by the judicious application of the X-ray. It occurs to me, every case of cancer of the breast should be X-rayed, after the removal of the breast or the tumor, to prevent a possible recurrence. I think they should be treated to the extent of producing a dermatitis. I know there are some among the laity and among the profession who doubt the beneficial effects of the X-rays. The therapeutic effect of the X-ray is unquestioned, and in these inoperable tumors it acts beneficially in many cases. It prolongs the lives of patients.

DR. CHARLES P. McNABB, of Knoxville.

I read a paper before this Society two years ago on "Mediastinal Tumors," and in preparing it I found it necessary to go somewhat extensively into the literature of the subject, and was convinced that nearly, if not all, cases of

mediastinal tumors are sarcomatous and begin in the remains of the thymus gland. The case on which that paper was based was a very interesting one in many respects, one of which was the results of X-ray treatment. I referred the case to Dr. F. R. Jones for treatment, and I do not know the number of applications that were made of the X-ray, nor the interval between treatments, but the growth diminished in size under Dr. Jones' care, although the patient died some months later. A post-mortem was not made, and I did not learn the entire history of the latter end of the case, but after looking up the literature I was convinced that it could not be anything else than sarcoma. Unfortunately, during the treatment there was vesication, an intense dermatitis developed, which ulcerated, and it was incurable, the poor fellow dying with his X-ray burn unhealed.

DR. LAWRENCE (closing the discussion):

I am almost afraid to say too much about the X-ray and what it will do, fearing you would not believe what little I do say. But since Dr. Savage told you that I sometimes tell the truth, I will venture to say a little more.

I want to call your attention to the remarkable work Dr. Cook, of New York, is doing in different conditions of the eye. He has a record of some two hundred cases treated by means of the X-ray. I will mention one case that I treated myself. A nurse with corneal scar had not been able to see beyond the perception of light for eight years in one eye; yet after four X-ray treatments she could count fingers.

Referring to Dr. Savage's remarks, it is my own belief that the X-ray will do for a great many cases what diphtheria antitoxin will accomplish for cases of diphtheria. Referring to the statement that the field for the use of the X-ray is broadening, I do not agree with that. It is narrowing daily. We have passed the time when we try it on everything and anything, and we confine its use now more largely to those cases in which we know what it will do. We should not try to make it a panacea. However, as I remarked in the paper, we are discovering from time to time some new uses for it. Dr. Cook, to whom I have alluded, has been doing this remarkable work on the eyes for the last eighteen months.

As to the length of the sittings: I rarely treat my patients more than two minutes, using lots of current, and a heavy tube.

Dr. Cowden is wrong with reference to the matter of high and low tubes. Any tube, if you get current enough through, will burn a patient.

According to Ohms' law, the amount of current that passes in the circuit is proportionate to the amount of resistance we put in the circuit. A

high tube means high resistance, and if you make it high enough, you will not get any current through it.

SURGICAL TYPES OF ABDOMINAL TUBERCULOSIS.

WILLIAM D. HAGGARD, M.D., NASHVILLE.



ABDOMINAL tuberculosis is not a clinical entity. It is a generic term embracing many forms of disease which may occur in the abdominal cavity. It is frequently impossible to tell which organ is affected and the term, therefore, covers the general symptom group.

The intestines and pelvic organs and peritoneum are the strongholds of the disease.

The duodenum, like the esophagus, is peculiarly immune to tuberculosis due to the rapid passage of the contents through these tubes and allows no opportunity for microbial fixation. The stomach also appears to have an immunity, which is due to the fairly certain destructive influences of the gastric juices upon the tubercle as upon other micro-organisms. Simmonds found only eight instances of tuberculosis of the stomach in two thousand autopsies on tuberculous subjects. That it may be primary in the stomach, however, is shown by Winternitz, who found nine instances in the literature, with no involvement of the lung, and fifty seven cases of secondary involvement.

Tuberculosis of the small intestines is usually secondary, but it has been found to occur primarily much oftener than was formerly believed. Experiments have proven that the bacilli may enter through the mucosa into the mesenteric glands and leave no demonstrable lesion to betoken its passage. Some pathologists claim that twenty-five per cent of tuberculosis gains entrance into the system through the intestinal mucosa. Revenal

collected four hundred and thirty-three cases of primary tuberculosis of the intestines. This disease when limited to the small intestine is notoriously a disorder of child life and gains its largest proportion when the transition of the mother's milk to cow's milk is made and mixed feeding with increased opportunity for infection is begun; even in adult life, excluding the eight per cent of cases which gain entrance through the lungs, Mayo believes that the use of uncooked milk and infected food causes the larger proportion of intestinal and abdominal types in rural communities. Pulmonary tuberculosis in cities is relatively more frequent than abdominal, which is partly due to the restricted use of uncooked milk as a food.

That portion of the intestine which abounds in lymphoid tissue (Peyer's patches) is attacked. The tubercle bacilli has a special predilection for these tissues in the lower ileum, cecum and appendix where, they lie immediately underneath the vulnerable mucosa. Invasion is invited mechanically by the slowing up of the fecal stream at this point. In the cecum it amounts to stagnation and the resulting infection is easy.

In the small intestine its advent is marked by chronic, persistent, intermittent or griping pains, bloody diarrhea, with emaciation and tenderness over the seat of ulceration.

It is the sequellae, however, such as strictures adherent and bands, and the development of peritonitis in childhood that are of surgical moment. The me-

chanical results mostly demand surgical interference. There are many sequellae, such as mixed infection and occasionally fatal hemorrhage from stricture or from hyperplastic proliferation; generalized tubercular peritonitis or localized peritonitis, with effusion abscess and fistula. There is also a rapid spread of miliary tuberculosis and also perforation with all its dangers. Nikoljski, quoted by Connell, found that forty-two per cent of intestinal stenosis was caused by tuberculosis. In view of these immediate and remote results, many of which, especially stricture, are almost inevitable, would it not be wise to subject certain of these localized tubercular ulcers to excision?

Stricture rarely presents the dramatically acute picture of ileus, but the chronic and recurrent manifestations of vomiting, pain, flatulency intermittent, diarrhea, with loss of strength and weight. The abdomen presents the "ladder-like" appearance, with visible peristalsis. The results of surgical intervention is, on the whole, quite gratifying on account of the chronicity. Intestinal resection is clearly indicated for the stricture due to ulcer in the small intestine. In the hyperplastic variety extirpation may be out of the question on account of its extent, and short circuiting is a fair substitute. The obstructive symptoms in this class of cases may abate and then recur. I have seen such a case in a man thirty-two years of age, whose sister died of phthisis. He presented the history of abdominal pain, with temporary obstruction, associated with slight fever, abdominal tenderness, distention, and free fluid. He had a history of chronic enteritis as a child. He was urged to have operation, but deferred it some weeks, at which time his obstruction became complete, and after it had been in existence over three days, operation disclosed an exceedingly large hyperplastic deposit, embracing a number of

coils of the lower ileum. In his extreme state resection was not to be considered; a temporary ileostomy was done, but the patient survived only two days. He ran the same formidable risks attending acute obstruction. There was grave anemia and a woful lack of resistance. This could have been anticipated by a timely operation for what seemed to be not an urgent matter.

Tuberculosis of the ileo-cecal region is the most frequent site in the alimentary tract; its localization there is so common and distinct as to be dignified with the distinctive term ileo-cecal disease. Conrath, quoted by Maylard, says this region is the site of election in about eighty-five per cent of all cases. The cecum has an abundance of lymphoid structures and is prone to frequent catarrhal conditions and internal trauma, and also has the normal stagnation of contents at this point which predispose to the fixation and invasion of micro-organisms. It may, and is often, the primary atrium. It occurs most frequently between twenty and forty years of age. Sixty per cent (53 out of 81 cases), according to Crider, occur between those years. Aside from its frequent primary location, swallowed bacteria from pulmonary infection causes the cecum to be the most frequent secondary site.

In addition to the ulcerative and hyperplastic types we have in this region an inflammatory form due to mixed infection often resulting in abscess. I have had two examples of this process in the last year. One occurred in a young man, who after an illness of ten days simulated mild appendicitis, with temperature, presented a tumor in the right iliac fossa that was not brawny like a ten-day appendicular abscess, nor was it as tender. The condition did not abate while under observation for five or six days, although the mass was not so perceptible, and it de-

creased under refrigeration. His condition was not urgent, but the continuous temperature and the possibility of tuberculosis determined operation. There was a considerable amount of granulation tissue which had walled in a chronic abscess. The cecum was mobilized and the appendix which had been implicated in the process was removed. There was considerable hemorrhage from the raw surface and it was so profuse that it could only be controlled by a large gauze pack, which remained for some days. A fecal fistula occurred on the third day, which, contrary to expectation, healed in three weeks. The process seemed to have expended itself in the inflammatory termination. The patient reacted positively to the first diagnostic dose of tuberculin. He has gained weight and strength and is well after six months.

A similar case occurred in an elderly man with a tumor in the right iliac fossa, but which did not present as much of a granulation cavity, but more glandular enlargement, which was removed with the appendix and a portion of the head of the cecum. His sickness had only lasted about three weeks before operation. He gave a positive tubercular reaction and recovered without incident.

Berard and Patel claim that there is no spontaneous cure of hyperplastic tuberculosis of the cecum; it is invariably fatal. I performed resection of the ileo-cecal junction for a perpendicular, sausage-like induration in a man twenty-seven years of age, which had been in existence about six weeks. He had chronic symptoms of obstruction with emaciation, with alternating diarrhea and occasionally great pain. Implantation of the divided end of the ileum into the site of the cecum with a Murphy button gave a satisfactory surgical restoration and allowed free excision of the diseased structure. The patient made an excellent primary recovery.

The operation may be exceedingly simple and vary in difficulty up to the impossible. This depends entirely upon the degree of fixation and the length and multiplicity of the foci. Cases not amenable to resection give fairly satisfactory results from intestinal exclusion. Short circuiting between the ileum and the colon by lateral implantation and suture seem best.

Mild symptoms of appendicitis in a man of twenty-five with a history of two preceding mild attacks; operation as an interval case and a considerable mass at the head of the cecum with the glands of the mesoappendix was seen to be tubercular. A partial resection of the cecum, together with the appendix relieved him of his slight symptoms and he remains well at the end of a year under constant medical supervision with continuous tubercular immunization.

In a twelve-year-old boy with hernia, a hard mass the size of a cherry was found in the sac and regarded as omentum. Upon operation it was found to be tubercular. The incision was prolonged upward for two or three inches and the entire omentum was found to be studded with tubercles, and it was removed by ligation almost at the transverse colon. The appendix was suspicious and proved to be tubercular upon histological examination. There was little free fluid, and the boy made a pleasing recovery and is able to work as a messenger boy.

Tuberculosis of the appendix apart from the disease of the cecum is quite rare. Oviatt and Connell found only one example of primary tuberculosis in three hundred appendices examined histologically. Lockwood, however, claims that two per cent of appendicitis is tubercular.

TUBERCULAR PERITONITIS.

It is less than a century since tuberculosis was recognized by Louis as being

the explanation of most cases of chronic peritonitis. About twenty-five years ago König was the first to regard it as being amenable to surgical treatment. Sir Spencer Wells, in 1862, operated for a localized collection of fluid under the supposition that it was an ovarian cyst and thus unwittingly laid the foundation for the many cures which have been accomplished since in similar cases of localized tubercular peritonitis. They have been variously diagnosed as tumors of the omentum, mesentery, floating kidney, hydro and pyo-nephrosis. Cummings, out of three thousand four hundred and five autopsies found tuberculosis of the peritoneum ninety-two times, or 2.7 per cent of the total number. Of these that were tubercular, 11 per cent had tubercular peritonitis. About 16 per cent of tubercular bodies at autopsy in another series showed tubercular peritonitis. The proportion of males to females was two to one. Forty per cent occurred between the ages of twenty and forty years. Of five thousand six hundred and seven intra-peritoneal operations, 3 per cent of operations performed by the Mayos was for some form of intra-peritoneal tuberculosis. Postmortem statistics give a larger percentage to males, but operating table statistics show four times as many females as males, which is accounted for by the frequency with which tubercular peritonitis is associated with infection originating or flourishing in the Fallopian tubes. This reason, and the fact that more women are subjected to abdominal section than men, may account for this proportion in the ratio, but Guildjides, after analyzing both postmortem and operative statistics, concludes that the disease is *de facto* more frequent in women. In children the proportion is about equal between the sexes.

Young patients with dropsy and slight abdominal symptoms usually have this

condition, and it should also be thought of in any doubtful case.

There has been much controversy as to whether tubal tuberculosis is primary and causative or the result of tubercular peritonitis. The surgical side believe in the former theory; but even if the latter were true, the surgical dicta to remove any focus that is a harbor or purveyor of infection is sound. Against the gravity or descending theory is the unanswerable fact that the greatest peritoneal involvement is closest to the tubes or the infected focus which thus confesses its guilt; if ascending infection by the lymph route from the vas causes tubercular peritonitis in the male, why may not the same thing be caused in the female through an avenue that is very much more prone to invasion?

In patients failing to improve after a reasonable attempt at general management they should have an exploration. On opening the abdomen in any case where there is no acute or malignant obstruction, and clear serum escapes at the incision, tubercular peritonitis is the most probable explanation. Next to the lungs and intestines the pelvic organs are the most frequently infected structures. Williams found 7.7 per cent of tubes that were removed for inflammatory process to be tubercular. Penrose and Beyea found 17.3 per cent.

Simple laparotomy in the eighties and nineties cured a certain proportion of the ascitic variety. This was variously attributed to the admission of air and sunlight, drainage, irrigation, to antiseptics, etc. There were collected about twenty theories to explain this result. Murphy, in 1904, showed that if the communication between the peritoneum and the source of supply be cut off, a cure would ensue as if the focus was actually removed. In the presence of ascites the tube floats in fluid in the peritoneum, like a bell clap-

per, but simple removal of the fluid allowed it to come in contact with a cerous surface and the fibrous formation caused encapsulation and obliteration of the process. If this fortunate circumstance did not occur the cases would relapse, and while we were acting upon the simple incision theory and the sunlight and air idea, many of those cases were subjected to laparotomies six or eight times. Some were finally cured, but it remained for Mayo to systematically trace up his own cases that relapsed and upon secondary operation to actually remove the diseased tubes and thus establish, in connection with Murphy's epoch-marking work, the present conception of radical removal of the actual focus of infection.

It has long been known that the ascitic type was the best and most favorable variety. Of twenty-six radical tubal operations made by the Mayos on cases of tubercular peritonitis twenty-five recovered permanently. Of this, seven had been operated on for simple laparotomy from one to four times previously. Surgeons learned that the ulcerative and fibrous form were most forbidding. Billings said that operation upon this class of patients was signing their death certificate, although Aldibert reported 15 per cent of cures, with mortality of 40 per cent. In our efforts to do more than simple exploration in these diseased cases fecal fistulae sometimes resulted, which added greatly to the miseries of the disease and rarely ever closed. The reason why opening the peritoneum did not benefit the fibrous type of cases as it did the ascitic variety, was that we were really not opening into the free peritoneal cavity at all, but into a walled-in space, which, while it was nature's ineffectual effort to cure the disease, was in nowise benefited by operation unless it was possible to remove the focus. This is sometimes accomplished with the greatest difficulty.

Mayo says he has had to trace the round ligament from the abdominal wall in order to locate the adnexial structures that were welded together in the pelvis.

Encouraged by the results in localized collections of a chronic character, we extend our efforts at relief to the infections which have run a course of four or five weeks under medical management, and perhaps have a record of typhoid fever or the gradual development of an abdominal tumor, draw the surgeon into the case, but most efforts at operation in these cases of mixed infection have been futile. I personally have never been able to cure a suppurating type and have found it unavailing in some six or eight cases. I have opened them from above and below. I have operated on the secondary for the removal of the gross pathology after primary incision and drainage had been done. They are all dead.

The acute type of peritonitis is most prone to be taken for acute appendicitis. We are indebted to Lund for a faithful portrayal of the surgical findings in the cases of acute tubercular peritonitis before the tubercles themselves appear, which he operated upon for acute appendicitis. He thus describes the conditions: "A thickening, edema and dull purplish congestion with dark greenish fluid were the conditions, only a very little fibrin in small, dark, yellow, soft, translucent flakes being present, and that in the bottom of the pelvis, where, about the openings of the Fallopian tubes, was the starting point of the disease. The difference between this and the bright-red congestion, seropurulent fluid and often abundant opaque fibrin of an acute septic appendicitis was notable."

The subacute cases come on slowly, with abdominal tenderness; tympany, low or continuous temperature, and, as above stated, simulate typhoid, which can

be excluded by Widal's reaction and tuberculin.

The chronic cases with symptoms of intestinal derangement, slow temperature and abdominal discomfort, with tympany, are often associated with exudate or tumor formation. It may be sacculated in the middle over the abdomen or in the pelvic cavity. Sometimes the fluid is sealed in the lesser cavity of the perineum by agglutination of the foramen of Winslow, and a smooth fluctuant globular tumor appears in the epigastrium.

The most constant tumor formation is a thickened, rolled-up, sausage-shaped mass lying somewhat transversely at the level of the umbilicus, which is the contracted omentum.

The diagnoses in these cases show from 30 to 70 per cent a family history of tuberculosis, and other tubercular lesions may exist in other serous sacs, in the pelvis, or the epididymis. Effusion with multiple masses is very significant of tubercle where malignancy can be excluded.

In doubtful cases I must attest to the very great satisfaction which the diagnostic tuberculin has afforded me. I regard it as being almost as pathognomonic as any of the clinical data which we have learned to depend upon. I begin with 1-1000 mg. and if at the end of three days no localized reddish reaction has occurred, I administer 1 mg. of tuberculin, and if this is not positive I give the third dose of 7 mg. three days later.

So far as the medical treatment of this disease is concerned there may have been some truth in the contention that about half of them were benefited, if not cured, by medical means before we recognized the importance of ascertaining, if possible, and removing the causative pathology. At the present time the contention has very little weight, and at best I think the advice of Shattuck is sound, that if the

patient under a month or six weeks of medical treatment fails to improve, or even in less time he seems to be losing ground, surgical treatment should be advised.

Rose investigated a series of supposed medical cures and found only one-third of them to be permanent. The trouble about medical cures was the accuracy of diagnosis. It is only in the operative cases that it can be positively asserted. If surgery is indicated in bad cases and accomplishes 85 per cent of cures, according to Sic, why should it not be invoked in the early cases, especially now that we recognize the most frequent location and are directing our efforts to the removal of the actual focus, if not the primary seat?

As contra indications to the operation should be mentioned advanced pulmonary, laryngeal or pleuritic implications, or that of the intestines, kidneys, or liver. Cases presenting high temperature and generalized infection should be avoided. In children under one year of age, the peritoneum is only a part of the general miliary infection and should not be molested. Persistent enteritis or mesenteric implication are contra indications. Operation is unavailing in the dry, fibrous forms, except for obstruction. Operation for acute perforation is very disastrous. The ulcerous forms with emaciation are also forlorn and the suppurative types are particularly hopeless. Operation for fecal fistulas are usually mortifying failures.

The technique which has been most satisfactory consists in the evacuation of the fluid, inspection of the pelvic cavity in the Trendelenburg posture. Examination of the appendix and cecum and the removal of all foci, if possible, should be the rule. The stumps and the walls of tubercular abscesses should be dried and rubbed with gauze. Drainage is unnecessary and frequently leads to second-

ary infection or to fistulae. Irrigation is likewise not indicated.

The operative mortality should not be over 3 per cent. Neff records 50 per cent of permanent cures and marked improvement in 8 per cent.

DISCUSSION ON THE PAPER OF DR. HAGGARD.

DR. JERE L. CROOK, of Jackson:

Mr. President: About five years ago I heard the essayist make the remark in discussing the subject of appendicitis that the proper attitude in reference to appendicitis was expectant-like on the part of the surgeon, with the knife in his hand. He had quoted some one else and amended it by saying that he thought the proper attitude of the conscientious surgeon in reference to appendicitis was to sit by the side of the patient with a look of triumph on his face, with the appendix in his hand.

In this subject of abdominal tuberculosis, the great attention it is receiving from the medical world makes this paper of unusual interest. The fact is, tuberculosis has three modes of entrance into the economy, namely: by means of swallowing, by direct infection through a laceration of the skin, and through the lung. The only point about tuberculosis that is humiliating or discouraging to the surgeon has been that it occurs in the lungs and ravages the lung tissue where the knife of the surgeon is unable to reach it. If we could advance to that particular point and be able to reach the lung surgically, the present mortality from tuberculosis would be materially lessened. But there is this comforting thought, that the surgeon can invade every other structure except the lung, and the statistics that have been given are encouraging.

I remember very well that some six years ago, when I saw Dr. Price, of Philadelphia, operate for tubercular peritonitis, he rubbed the peritoneum with gauze, picked up the omentum, and did what he called a sunshiny operation. He spoke of the importance of sunshine, saying it had much to do with the cure of patients suffering from tubercular peritonitis. He allowed the abdomen to remain open a while, putting in a retractor, rubbed in aristol, and finally closed the abdomen.

The doctor's explanation of why these operations have been successful in the past was certainly new to me. If we can eliminate a specific history in a case of inflamed Fallopian tube or tubes, we can put it down that the case is infected with tuberculous, and if we find evidences

of secondary tubercular involvement in the lungs, incision of the abdomen is indicated. I operated on a case of that character, and after relieving the condition of the inflamed tube, the condition in the lung cleared up. Of course, I took refuge in the assumption of Dr. Price, that fresh air, exercise, a liberal diet, in short, the most modern treatment of tuberculosis, would enable the patient to recover from lung trouble. If we can reach these cases early surgically, I believe it is not too much to expect that surgeons will contribute their quota toward lessening the mortality from this terrible scourge.

DR. W. FRANK GLENN, of Nashville:

The remarks of Dr. Crook brought a suggestion to me, although I have had only one case, and that is the use of hypodermic injections of mercury as an antidote for the tubercle bacilli. Shortly after reading the Army Government Report, I had a case of tuberculous of the larynx. The microscopic examination revealed the fact that there were tubercle bacilli present in the expectoration. I used the salicylate of mercury once a week, and in three months the man gained twenty-seven pounds, and all symptoms of throat trouble disappeared. I do not remember the name of the surgeon who first discovered it. At present the mortality from this treatment is said to be less than one per cent. I think he has thoroughly demonstrated that mercury given hypodermically is an antidote to the tubercle bacilli just as it is to the spirochete. The dose must be regulated according to the age of the patient. You give about one grain. Some patients must receive less.

Dr. Crook spoke of being unable to reach the lung so as to attack it surgically. If in addition to removing the points of infection the patient gets fresh air, sunlight, and mercury hypodermically, we may be able to reach the lungs and cure almost any organ if we get the case in time, before adhesions have taken place.

DR. RICHARD A. BARR, of Nashville:

Dr. Haggard's discussion of this subject of abdominal tuberculosis has been so thorough and so complete, that it offers very little or no opportunity for discussion except to agree with him fully in the position he has taken.

There is just one aspect of tuberculous in which surgery is indicated, in which we can ignore temporarily, so to speak, the tubercular nature of the process. In abdominal tuberculosis, when we have intestinal obstruction, we figure out the tubercular process temporarily and operate for the relief of the obstruction. In

other words, the obstruction is the primary object of surgery when we have actual mechanical intestinal obstruction. That does not make abdominal tuberculosis a surgical condition, for the fact is that we have to operate for the relief of the intestinal obstruction. Leaving out the necessity for surgery in conditions arising like that, and assuming that we have made a diagnosis of abdominal tuberculosis, under what conditions can we consider it a surgical condition? Tuberculosis is a surgical condition primarily, if we can be absolutely sure that by an operation we can remove every vestige of the pathological process. Any one will admit that if we can do an operation and remove every vestige of the tubercular process and not remove any of the vital organs, leaving the patient alive, so to speak, it is then a distinctly surgical condition. We do have tubercular processes within the abdomen that can be treated in this radical way, and these cases are distinctly surgical. We have ileocecal tuberculosis and tuberculosis of the tubes, etc. Any surgeon or general practitioner will admit the possibility of this condition being surgical, and of surgery offering a possible satisfactory method of treatment.

The next class of cases of abdominal tuberculosis which may be considered surgical are those in which we have hope of removing the primary focus of the disease. This leaves out of consideration intestinal obstruction. It does not make any difference whether a patient has a cavity in the lung, if an acute intestinal obstruction comes up, some operation is essential for its relief. I am not discussing that character of case. Leaving out of consideration these obstructive conditions, in tuberculosis, when we remove the primary focus, it has been proved by experience that the secondary focus will get well. For instance, when we remove a primary tubercular kidney, tuberculosis of the bladder and ureter will heal. If you remove ileocecal tuberculosis, the tubercular peritonitis secondary to that will heal, so that abdominal tuberculosis is a surgical condition when we can remove the primary focus of disease. Under other circumstances than these, is it ever a surgical condition? Blind surgery of the abdomen, as Dr. Haggard has pointed out, without our doing anything of which we are aware, occasionally results in cure. Let us take tubercular peritonitis, simply an incision, with evacuation of the fluid, without any effort to find the primary focus and remove it, without doing anything except possibly finding that we made a mistake in diagnosis, and closing up the belly results in a cure. If we cannot remove the whole disease or the primary focus,

these cases are still sometimes surgical in their nature, and for this reason surgical exploration of the abdomen is frequently justified where we have no hope of removing the whole disease or even the primary focus. One thing is very essential in tubercular disease of the abdomen, and that is to do no harm in the process of exploration in the way of breaking up extensive adhesions, because unless the work is done with the greatest care it is apt to result in the formation of fecal fistulae. I think if I got into the abdomen and found extensive adhesions, I would hesitate between breaking up those extensive adhesions and leaving the primary focus behind. It takes skill and courage to enter the abdomen in the face of adhesions and remove appendages or ileocecal tuberculosis, and get out without probably doing your patient more harm than good. But where we feel reasonably sure before we enter the abdomen we cannot remove the primary focus, I still think a carefully done abdominal exploration is justifiable, because we may get unexpectedly satisfactory results where we least expect them. I know of one case in which I expected to do nothing; when I entered the abdomen I found the omentum rolled up in a mass across the upper portion of the abdomen, the intestines drawn back against the posterior wall, and so covered up with inflammatory exudate for at least half their length that they could hardly be recognized except by their outlines in the mass of exudate, yet this patient recovered and has been well for something like four years. I had no idea I would get any result from that operation. I did not expect to be able to do much, and it was a mere exploration rather than otherwise. I found the condition inoperable, and yet I got quite a satisfactory result. Certainly, there was prolongation of the patient's life, and, as I have said, she is apparently well after four years. There was an enormous amount of fluid in this case, which was unilateral in its location. It might be called an encysted peritoneal exudate, because a part of the cavity was shut off by adhesions. I simply evacuated the fluid, and to my great surprise I accomplished something.

DR. JOHN A. WITHERSPOON, of Nashville:

I feel as an internist that possibly someone other than surgeons should speak on this important subject, especially in view of the fact of modern investigations and discoveries.

Dr. Haggard's paper is a most excellent one, and to my mind the most valuable part of it was in the fact that well-known and well-recognized focal points of deposit of tuberculosis occur most frequently in the abdomen. I believe that ab-

dominal tuberculosis is very largely a surgical disease. Medicine can practically promise nothing in these cases. The trouble about it formerly has been to make an accurate diagnosis, but the use of tuberculin as a diagnostic measure has brought about a very much better condition in the diagnosis of this disease than formerly.

Dr. Crook remarked that tuberculosis of the lung could not be reached by the surgeon. The fact that abdominal tuberculosis is so fixed that we do not get early mixed infection, that we do not have streptococcus infection associated with it, is one reason why it is essentially amenable to surgery. I do not believe that if mixed infection takes place surgery can promise anything, or at least very little, in the treatment. So long as it is essentially tubercular, then I believe we as internists should agree with the surgeon that operations in many of these cases are valuable and life-saving measures, and now, since the diagnostic means of recognizing the disease and the primary sites of it are so well outlined, I feel that it is time for the internist to acknowledge that abdominal tuberculosis is not within his field except for diagnostic purposes, and that our brother, the surgeon, should give the relief as far as possible.

DR. HAGGARD (closing the discussion):

There are two thoughts I wish to refer to, one

the clinical picture of the most frequent type. If a woman in middle life is found to have some pelvic discomfort, with a mass to one side of the uterus, somewhat tender, with afternoon temperature, and subsequently develops ascites, that case is not likely to be anything else but tubercular peritonitis coming from the Fallopian tube; whether the Fallopian tube is primarily affected or not, or whether the infection comes from below or above, is immaterial. If there is a mass in the pelvis, with elevation of temperature, and the patient reacts to the tuberculin test, then the removal of the tubes will cure seventy-five per cent of such cases.

In the literature there is a distinct statement made to the effect that there is no such thing as secondary involvement of the operative wound by tuberculosis. I have seen two cases in which the wound became infected, in one of which the infection continued for six weeks, and in another for six months, but finally healing occurred in both after thorough curettage.

I am appreciative of the courtesy that has been extended to me by those who have taken part in the discussion, and I feel that this subject is one that has large potentialities, and that with our present diagnostic means we should reclaim many of the cases which heretofore were sad failures.

ACUTE GLAUCOMA FROM THE STANDPOINT OF THOSE OTHER THAN OPHTHALMOLOGISTS.*

E. C. ELLETT, M.D., MEMPHIS.



IN the process of trying to teach ophthalmology to others I have learned a good deal of it myself, and especially have I managed to classify and set in order the knowledge which was, at least in places, previously somewhat confused. Permit me to present a brief synopsis of the subject of glaucoma as a prelude to what I have to say about acute glaucoma, which synopsis is essentially that contained in my little book on the "Diseases of the Eye," prepared for the College of Physicians and Surgeons.

Glaucoma is a disease process whose essential feature is an increase of intra-

ocular tension. We estimate intra-ocular tension by the somewhat crude method of palpation, and while apparently crude, it is quite easy, after a little practice, to detect an increase of tension, especially if a normal eye is accessible for comparison, and any one with the delicacy of touch that every medical man is presumed to possess, can learn to get accurate results by a little care and practice.

Two varieties of glaucoma are recognized: primary and secondary. Primary alone need concern us, as secondary glaucoma is evidently a complicated affair and not likely to be taken for a simple

*Read by title.

trouble. Primary glaucoma we find to be further divided into inflammatory and non-inflammatory. Practically synonymous with these terms are acute and chronic—that is, acute glaucoma is inflammatory and chronic glaucoma is non-inflammatory, or simple glaucoma. “Always” and “never” are words rarely permissible in the medical dictionary; so in our classification we must remember that the species of one genus are not always as distinct as we would like, but merge into one another. In other words, we recognize an intermediate type, or congestive type, but it seems to me best to teach only these two to make the subject as clear as possible.

Non-inflammatory glaucoma, or chronic glaucoma, or simple glaucoma, is a disease characterized by the gradual failure of sight, and nothing else. Halos, pain, etc., belong to congestive periods, which might be called intermediate, or mild inflammatory cases. Non-inflammatory glaucoma is recognized by characteristic changes in the field of vision, and in the appearance of the optic nerve. The tension is often very little elevated, and the pupil no larger than it would be in optic nerve atrophy. This, then, is not a question for those other than ophthalmologists.

How different is acute glaucoma. A bolt from the blue, sudden and severe in onset, with excruciating pain in the whole side of the head as well as in the eye, the eye is inflamed, prostration is marked, nausea and vomiting are often present, and not rarely a rise of temperature is to be noted. The eye symptoms are the pain, great impairment of vision, a dilated pupil, and increase of intra-ocular tension. It is at the last two points that it articulates with the picture of non-inflammatory glaucoma, apparently such a different disease.

A patient with such an attack is usu-

ally seen first by his family physician. To him such symptoms suggest the onset of some acute infectious disease rather than an eye trouble. The pain in the head, nausea, and rise of temperature will be set down often to that mysterious disease, “biliousness.” This is due to the fact that many cases of acute infectious diseases and “biliousness” come under the notice of one doing general practice for every case of acute glaucoma, which is in fact a rather rare disease. I would be glad to be the means of inducing those who see such cases first to introduce into their mental category of possibilities, “Is this glaucoma?” If it is once thought of, it will not be overlooked when present. The dilated pupil is very noticeable, and the impairment of vision easily detected. These will arouse suspicion, and some one else may be called on, if necessary, to pass on the state of the intra-ocular tension.

In passing, allow me to pay my respects to a much-abused term in medicine—namely, neuralgia. Any pain to which we are unable to assign a cause becomes neuralgia. Many a case of glaucoma is so considered, and treated with “dope” of different sorts till vision is lost. I think the majority of cases diagnosed neuralgia will be found to be cases of iritis, glaucoma, or sinus disease. The latter are the “sun pains” of our fathers. A few cases will remain to which the term neuralgia may apparently properly be applied, but should, I think, only be so diagnosed after careful exclusion of at least these three conditions.

In regard to the treatment of glaucoma, this is a matter for one trained in ophthalmology, and no time should be lost in seeking the advice of such a one. This may sound like a pretty open bid for consultation practice, but in my opinion any one not trained in the treatment of diseases of the eye has no more business “monkey-

ing" (for that is what he does) with glaucoma than the ophthalmologist would have "monkeying" with pneumonia or appendicitis; indeed not as much, for the latter has served his apprenticeship in general work, and usually knows something about it.

Probably in no other condition is treatment followed by such satisfactory results as in acute glaucoma. Proper treatment is usually the operation of iridectomy, and as far as my experience goes, the prompt relief from pain, the restoration of vision, and the alleviation of inflammatory symptoms which follow a properly executed iridectomy done in time, is the most brilliant and gratifying procedure in surgery. It must, however, be properly executed and done in time.

This leads me to a bypath, which I will follow for a moment. The general practitioner seems to be passing away. Every one is some kind of a specialist, often made so over night by his own vivid imagination and the earnest search for a soft snap. The day must come when some authority will have to pass on a man's qualifications to practice a specialty, without which endorsement he should not be permitted to do special work. In England, Oxford has taken up the question of ophthalmology along these lines and proposes to give its diploma, upon examination, to those specially equipped in this subject.

The report of a few pertinent cases will conclude this paper:

Case 1. Mrs. M., aged 63, was seen in December, 1907. She gave a history of some inflammatory trouble with the right eye the previous spring, which was possibly glaucoma. Six weeks before I saw her the right eye became involved again, but the character of the trouble was not recognized, and three weeks later the left eye became involved. I found typical acute glaucoma, and did double iridec-

tomy at once under general anesthesia. Both eyes became at once painless and quiet, with normal tension, but the vision in the right eye was lost. Subsequent removal of a cataract and a needling in the left eye have given sufficient vision to enable her to find her way about. This case shows the serious results when treatment is delayed.

Case 2. A recent case, Mrs. H., aged 51, developed acute glaucoma while nursing her sick husband. She received no treatment for about a month, and then eserine, but the vision was lost, and while eserine partially relieved the pain, it did not do so entirely, and did not restore vision. An iridectomy, done when I saw her, two months after the attack, relieved the pain, inflammation, and increase of tension, but I do not think she will see again. Again, the danger of delay.

Case 3. A lady, aged 51, had lost one eye from glaucoma in 1897. In 1904 I removed this eye for pain. She had glaucoma of the non-inflammatory type in the other eye, and under eserine it was quiet and soft. Two months after removing the first eye, her physician wrote that he found "the eye considerably inflamed and the pupil considerably dilated. I have used a little zinc sulphate, which seems to control the inflammation, but she still suffers pain in the ball." She was brought to me at once and iridectomy performed on this eye, with great relief. Eighteen months later her vision was two-thirds, and tension normal. The field was somewhat contracted. Operation certainly saved this eye.

Case 4. Mrs. A., aged 66, was seen in the fourth week of a trouble diagnosed "neuralgia" by three physicians, one an eye specialist. Vision was practically lost in the first few days of the attack. The condition was one of typical acute glaucoma. Iridectomy was done under ether the day after I saw her, with imme-

diate relief of all subjective symptoms and ultimate restoration of vision to one-half. The field of vision is contracted, but the result was very gratifying. In this case operation was followed by much better results than we had a right to expect.

Case 5. Mrs. E., aged 56, lost her left eye in 1897. In 1904 I diagnosed the condition as chronic glaucoma, the right eye at that time being normal. In January, 1905, she had an attack of acute glaucoma in the right eye, which was relieved by eserine. An iridectomy was then done, and now, four years later, she sees twenty-twenty-fifths, and has a normal field of vision. There is no symptom of glaucoma and but for the operation this eye would have followed the same course that the other did.

Case 6. A lady, aged, 78, was told by me in 1900 that she had incipient cataract, but vision was good, and the eyes otherwise healthy. In 1908 she was taken with a severe acute inflammatory attack in both eyes, and lost her sight. The pain was very severe, and not allayed by treatment directed to her "biliousness," "neuralgia," "iritis," and "corneal ulcers." She certainly had some superficial ulceration of the cornea, for when I saw her in December she was blind, with balls of stony hardness, dilated

pupils, and large, white scales deposited on both corneae as the result of treating her corneal ulcers with sugar of lead. I suggested operation, which was declined. I doubt if it could have helped her any. I forbear to draw a moral from this case.

Case 7. In 1899 I examined Mr. S.'s eyes and found them normal, except for an astigmatism. In 1902 he developed mild acute glaucoma. Eserine combatted the condition, but he was careless about using it, and after a month's treatment an iridectomy was done. Six and a half years later he sees two-thirds in that eye, and has a practically normal field, with no sign of a return of the glaucoma.

Case 8. Illustrates what can be done without operation. Mr. F. had been told by me that he had immature cataract. He also had advanced nephritis. He was taken with acute glaucoma in the East, and an iridectomy and later a cataract extraction done on the affected eye. In November, 1907, I was called to see him in an attack of acute glaucoma in the other eye. Operation was hardly to be thought of, as he was dropsical and asthmatic and might be expected to die any day. Eserine, dionin, and hot applications succeeded in cutting short the attack, and though he lived over a year, he did not have a return of any of the symptoms.

A COMPARISON OF THE VARIOUS TUBERCULIN TESTS IN THE EARLY DIAGNOSIS OF TUBERCULOSIS.

WM. LITTERER, A.M., M.D., NASHVILLE.

Professor Bacteriology and Pathology, Vanderbilt University.

THE early diagnosis of tuberculosis was never made more apparent than it is today. The superlative importance of obtaining as early a recognition of this disease as possible is self-evident. It is in the incipient stages that the greatest amount of effort should be exerted toward diagnosis, be-

cause a cure can be promised to the majority of these individuals if recognition is made before serious pathologic changes have taken place.

The difficulties attending the recognition of this affection in its incipiency are manifold; particularly is this true of obscure lesions of the bones, joints, lymph-

nodes, viscera, the nervous system, doubtful apex lesions, and the like. When these structures are infected with tubercle bacilli, not infrequently indefinite and ill-defined symptoms arise, which tend to leave us in doubt concerning the true nature underlying the pathologic process. Thanks to the introduction of refined methods which enable us to arrive at earlier and more definite conclusions. It is in this class of patients, particularly, that diagnostic tuberculin tests are warranted. If they are not tuberculous it is a great injustice to ostracise them; if they prove to be tuberculous, it is beneficial both to the patients themselves and their fellows that they be treated as such. The employment of tuberculin subcutaneously proved to be a valuable adjuvant to our diagnostic armamentarium in determining the presence or absence in tuberculous affections in doubtful cases. Added impetus of the subject has been recently aroused by the announcement by Von Pirquet of his cutaneous method of applying tuberculin for diagnostic purposes. A little later came the almost simultaneous and independent communications of Wolff-Eisner and Calmette describing their conjunctival method. Other methods, virtually modifications of the Von Pirquet test, have lately been described. The most important of these are the Moro ointment reaction, the Lignieres, the Lauvier, the Mantoux intradermal test, and many others. Some of these tests give promise of being simpler and possibly just as accurate as the much older and established subcutaneous test.

PREPARATION OF TUBERCULIN.

In order that the results of my experiments be of value in comparison with others, I have deemed it wise to manufacture my own tuberculin, giving exact methods of preparation. This insures fresh products, made from the same

strains of tubercle bacilli and from the same kind of culture media.

KOCH'S OLD TUBERCULIN.

The method of preparation consists of the inoculation of five strains of the human type of the tubercle bacillus at incubator temperature on glycerin bouillon, grown until the culture had covered the entire surface, which usually takes place in about six to eight weeks. The flasks containing the culture media were sterilized by steam for three hours. The bulk of the organisms is then removed by an ordinary filter paper followed by a double filtration through a fine-flow Berkefeld filter. The filtrate containing toxins (tuberculin) was evaporated over a water bath to 1-10 of its original volume and again filtered through a Berkefeld, collected in suitable bottles, and sterilized by the fractional method.

The Bovine Tuberculin was prepared identically as the above, substituting five strains of bovine for the human cultures.

TUBERCULIN PRECIPITATE (T. P.).

One volume of Koch's old tuberculin (being made by above process) is slowly added to two volumes of 95 per cent alcohol in a tall cylinder. As soon as the precipitate settles to the bottom, decant the supernatant liquid, then collect precipitate on a hard filter. To aid filtration, a suction pump is used. Wash precipitate with 70 per cent alcohol until it runs through clear. It is then dried in vacuo over sulphuric acid and when perfectly dry is ground up in a mortar into fine powder. The powder can be either weighed and made into compressed tablets or dissolved into normal saline solution to whatever strength desired. This preparation is practically exclusively used in the ocular tests in strengths of .5 of 1 per cent to 2 per cent.

Calmette (1) suggests that freshly prepared material be used.

I am now using this preparation for the Von Pirquet cutaneous reaction in strengths of 25 per cent and find that negative reactions are obtained in a few healthy persons, where positive tests resulted by the use of the old tuberculin on the same subjects. From this it would seem to indicate that the "precipitated tuberculin" is not quite so sensitive or else it has been freed from all irritating substances that may be found in the "old tuberculin." These substances, when present, may produce false reactions in healthy individuals. Many more tests will have to be recorded in order to prove or refute these statements.

Another advantage in using the precipitated tuberculin is that a more uniform strength can be obtained than by the use of the old tuberculin, which is next to impossible to standardize to uniform strength.

Of the many specific aids in the diagnosis of tuberculosis, I shall take up those which I deem the most important—viz, the subcutaneous, the Von Pirquet Cutaneous, the Wolff-Eisner-Calmette Eye test, and the Moro Ointment reaction. There are others that are more or less modifications of the above tests, and still there are others, such as estimating the eponic index, the agglutination test, cyto diagnosis, etc., that are quite valuable, but time will not permit their being discussed in this paper.

THE SUBCUTANEOUS TEST.

In the whole range of medicine there is scarcely a more interesting phenomenon than the tuberculin reaction. We have a substance which to healthy animals is practically inert, while it becomes highly toxic toward subjects that are affected with only a very trivial tuberculous lesion.

The honor of first employing tuberculin for diagnostic purposes is generally attributed to Von Bergman. He used it to determine the nature of a tumor on the cheek, supposedly tuberculous. A decade ago those of our profession who advocated the use of tuberculin were exceedingly few and far between. The first few years of its use resulted in nothing short of disaster, and caused for a time the abandonment of what greater experience and careful employment have proved to be our most valuable diagnostic agent for tuberculosis. The use of tuberculin for diagnosis and treatment is increasing. To-day we find a majority of the progressive members of our profession employing the remedy at least as a diagnostic measure. Those who were loudest in their denunciations a few years ago have now become non-committal.

The consensus of opinion is that not only is it a valuable diagnostic test, but it is harmless in selected cases when the proper dose is administered. In febrile cases it should never be used. Prof. William Osler, speaking before the British Congress of Tuberculosis, makes the following statements that "in the wards of the Johns Hopkins Hospital we have used tuberculin very much as Prof. Koch has advised, and I bear willing testimony to its inestimable value in certain cases, particularly in doubtful apex lesions and obscure abdominal cases, and in pleurisy. An important point is its harmlessness. I remember no cases in which injurious results have followed the injection."

METHOD OF ADMINISTRATION.

The temperature of the patient should be taken once in three or four hours for a period of several days before giving the first injection. The pulse rate of the patient is to be also investigated. As a rule, I have not used the test in patients hav-

(1) *Presse Medicale*, July 19, 1907.

ing maximum temperature, over 100F. The initial hypodermic injection is 1-10 of a milligram of Koch's old tuberculin. This is called the "first diagnostic dose." During the test period the temperature is taken every two hours. After each injection the patient's symptoms are recorded and the chest examined. If no reaction follows this, in from three to four days, give another injection (second diagnostic) of tuberculin one milligram, and if the second dose fails to respond, give three or four days later (the third diagnostic) of tuberculin seven milligrams. If no reaction results from the third diagnostic dose, we are reasonably assured that the patient has no manifest tuberculous lesions. The doses for children from 7 to 14 years of age are as follows: First diagnostic, 1-20 milligram; second diagnostic, 1-10 milligram, and third diagnostic, 1 milligram.

THE REACTION.

In every typical tuberculin reaction there are four features which are recorded, viz: (1) Temperature, (2) constitutional symptoms, (3) local reaction, (4) focal reaction. A rise in temperature of 1 degree F. above the previous maximum is considered positive. As a rule the temperature begins to rise in six to twelve hours, reaches its fastigium in twelve to twenty-four hours, and is normal again in another twenty-four to thirty-six hours. Sometimes reactions are delayed twenty-four hours after the injections. Great importance is attached to the development of general and local phenomena. According to Schulz, who has had ripe experience with its use, he claims that even in the event of only a slight rise in temperature, the development of rales where they were previously absent, or the occurrence of general symptoms—such as headache and backache, pain in the joints, nausea, increased expectora-

tion, etc.—are considered positive. Owing to these latter symptoms there are some who condemn its use. The most important arguments against its administration are: (1) Its inapplicability in pyrexial cases, (2) the general malaise and discomfort attending a positive reaction, (3) the lowering of the opsonic index which takes place as a result of injecting large doses of tuberculin into the system. It is obvious that a method producing the same results, which could be used in febrile cases and which would be free from attendant discomforts, would be of enormous advantage. It is with this expectation that one turns to the non-constitutional or local reactions.

THE VON PIRQUET CUTANEOUS REACTION.

A variable degree of local irritation at the site of injection of tuberculin has long been noted in subcutaneous use on tuberculous patients, but its true significance was not fully realized until Von Pirquet called attention to the fact that if a person should be vaccinated against variola (smallpox), and later if this person should be revaccinated after several months, that a rapid development of hypermia and swelling will take place in the scarifications of the secondary vaccination, which quickly subsides, leaving no pustule or scar. After careful observation of the above phenomenon, he tried the same method in tuberculous subjects and found that only individuals who had been infected previously with this disease showed a persistent local inflammation when Koch's old tuberculin was applied to a scarified area in any part of the body. This reaction is due to the increased sensitiveness of the tissues of the tuberculous, as compared with non-tuberculous persons, who should exhibit little or no sign of irritation from the same procedure.

Modes of Application.—The arm is washed with soap and water, then with alcohol, and allowed to dry. Three minute scarifications about the size of a match head are made two inches apart on the length of the arm. The scarifications should be just deep enough to produce a little redness without drawing blood, such as in ordinary vaccination.

In the upper and lower areas (scarification) one drop of the precipitated tuberculin solution is applied to each. The middle area, or scarification, is unmo- lested, being used as a control. The arm is exposed to the air about ten minutes to allow the solution to dry. A dressing may be applied, but this is not necessary. The slightest reaction can be discerned by comparing the upper and lower scarified areas with the central area upon which no tuberculin was placed. Examination for signs of reaction should be made every six hours. The earlier a reaction appears, the more likely has the patient an active form of tuberculosis. If the reaction is not apparent within twenty-four hours, the probability is that the patient has no active tuberculosis. A negative reaction is of the surest value, indicating an absence of a tuberculous process. If the reaction does not manifest itself until about forty-eight hours, then it is considered to indicate a latent, or healed, tuberculous condition. The reaction is characterized by a hyperemic zone occurring adjacent to the scar, usually circular in shape, extending outward as the reaction increases in intensity. It varies greatly in size, from one-fourth inch to two inches or more in diameter. Usually there is an indurated elevation in the central zone which, in the severer reactions, will be covered with minute vesicles. Itching is quite common. The disappearance of the reaction will take place in a few days, followed often by a brownish pigmentation at the site

of the reaction, which persists for some time. The reaction is not attended by general symptoms, such as fever and malaise.

OPHTHALMIC TEST.

Wolff-Eisner showed that by instillation of a dilute solution of tuberculin into the eye of a tuberculous subject that a local reaction resulted in a few hours, which was characterized by a congestion of the conjunctiva and caruncle, with a more or less abundant sero-fibrinous exudate.

Method of Application.—It is imperative to avoid unnecessarily severe reactions. With this end in view two solutions have been agreed upon. The weaker solution No. 1, with a strength of .3 of 1 per cent, is employed, and if no reaction manifests itself within forty-eight hours, then the strong solution, No. 2, with a strength of .8 of 1 per cent is employed in the opposite eye. The same eye should not be used for the second test, as it becomes sensitized by a single test. The precipitated and purified tuberculin should always be used to avoid any irritating properties that may be present in the old tuberculins.

Technique.—The eyelid is pulled down and one drop of the tuberculin is instilled into the eye. Care should be exercised that the drop does not flow on the cheek. This can be very easily prevented by holding the lid down so that the material can be distributed about the sac. If no reaction takes place in forty-eight hours, then use the stronger solution, No. 2, in the opposite eye. Warm the solution before putting into eye.

Reaction.—If the patient is tuberculous, you will notice the first symptoms of a reaction appearing in from three to twelve hours; sometimes it may be delayed even forty-eight hours. The presence of a reaction is indicated by lachry-

mation, redness of conjunctiva, and by a scratchy feeling, as if something were in the eye. Reaction should not always be expected in far advanced tuberculosis.

Contra-indications.—Any inflammation of the eye or lids—conjunctivitis trachoma, keratitis, and iritis. Eye strains from errors or refraction need not prevent the use of the test.

OINTMENT TEST.

Prof. Ernest Moro, of Munich, describes his percutaneous test, as follows: A tuberculin ointment is prepared, containing equal parts of "old" tuberculin and refined anhydrous lanolin. The favorite site of the test is the skin of the abdomen immediately below the Xiphoid process. If an eruption is noticed in this area, then select some portion of abdomen in which it is free. The site is washed with soap and water, then with alcohol, and allowed to dry. About fifteen grains of the ointment is rubbed in for forty-five seconds over an area of about two inches in diameter. It is then exposed for about ten minutes and a gauze dressing applied to prevent the extension of the reaction by contact with any other portion of the body.

Reaction.—The reaction is noted by the appearance of a papular efflorescence or nodular eruption at the site of inunction. It usually appears within forty-eight hours, seldom later. In severe reactions it may occur within the first few hours after the application of the ointment, and is characterized by the formation of 100 or more red nodules, varying in size from a pinhead to three times its size. The reaction is nearly always accompanied by itching. After a few days the lesions will dry up and desquamate. No constitutional symptoms—such as rise of temperature, headache, general malaise, etc.—accompany the reaction.

THEORETICAL CONSIDERATIONS OF CAUSES OF THE VARIOUS REACTIONS.

A discussion of the reason for the causes of the various reactions seems necessary. It may be stated that we are still far from a satisfactory understanding of even its fundamental principles.

Frissell and Ingen, in discussing this phase of the subject, state that unfortunately the subject is an extremely obscure one, about which there is a vast difference of opinion and many theories. They are of the opinion that either some substance is present in the bodies of tuberculous subjects not present in normal individuals, or some substance is lacking in the former which is present in the latter. According to the first hypothesis, the substance peculiar to the tuberculous, reacts with the injected tuberculin, causing sufficient irritation at the point of contact to set up an inflammation; or if the second hypothesis be correct, the substance present only in normal bodies prevents a reaction by union with an irritant substance injected. A priori, the first of these hypotheses, would seem the more reasonable, as it is known that in tuberculosis various substances are produced in the body as the result of the stimulation or irritation due to the presence of foreign bacteria. Such substances come under the classification or general head of immune bodies, bacteriolysins, opsonins, etc.

Wasserman claims that the tuberculin reaction consists of a chemical reaction between tuberculin and the antituberculin elaborated by the body in defense, the meeting of the two in a tuberculous focus causing a local inflammation.

The views of Wolff-Eisner seem to fit best into what we at present know of the tuberculin reaction. According to Hamman,* his views are as follows:

*Archives of Internal Medicine, June, 1909.

Tuberculin, which really consists of ultra-microscopic portions of the tubercle bacillus, produces the same effects in the animal body as tubercle bacilli, except that the latter are capable of multiplication. The local tuberculin reaction is caused by an accumulation of lymphoid cells, and true giant cells are formed. The injection of living tubercle bacilli is followed by the development of hypersensitiveness, the same as that which follows tuberculin injections. As in typhoid and cholera, the immunity reaction in tuberculosis depends on the presence of lysins. The tuberculin reaction is not due to the tuberculin itself nor to the disintegration at the site of disease, but to a new toxic substance formed by the action of the lysins on the albuminous portion, organism must be in a condition of hypersensitiveness. There are, then, two factors to be considered: the presence of lysins and the condition of hypersusceptibility. The lysins may be artificially increased, and are the bodies which deviate complement in Wasserman's experiment. The hypersensitiveness varies under conditions of which we are still ignorant, but it, too, may to some extent be stimulated or obtunded. Normally there is no lysin present, or so small an amount that when tuberculin is injected the transformation goes so slowly that the newly formed toxin causes no appreciable effect. Under continuous minimal stimulation the quantity of lysin increases, and the transformation then occurs so rapidly that, after an injection, intense toxic symptoms occur. The toxin causes a local reaction at the site of injection, constitutional symptoms and an inflammatory reaction at the site of the tuberculous lesion. During the inoculation of small doses of tuberculin hypersensitiveness is developed. Variation in susceptibility to tuberculin in tuberculous subjects depends essentially on variation

in hypersensitiveness, lysins, probably being present in all.

These theoretical considerations are of great importance for a proper appreciation of the clinical significance of the tuberculin reaction. They are the basis of a reasonable understanding of the question why many healthy individuals react and why some tuberculous subjects do not, and give the foundation to our present method of conducting the reaction.

ORIGINAL INVESTIGATION.

Within the past year and a half I and my assistants have been able to collect some data relative to the various tuberculin tests. There were 147 ophthalmic tests made: 120 Von Pirquet, 58 Moro, 12 Ligniers, 80 subcutaneous, and 20 each bovine and human tests. Our patients were obtained from Vanderbilt Hospital and out-door department, from the Nashville City Hospital, from the Industrial School, and from students. Four of the above tests—viz, (1) eye, (2) skin, (3) ointment, (4) subcutaneous tests—were given to thirty patients, all reacting to the Von Pirquet test, twenty-four to the ocular, twenty-five to the ointment, and twenty-two to the subcutaneous. In five tests by the Von Pirquet method the reaction did not appear until after thirty-six hours. In three of these five cases the Moro reaction was also delayed; two were negative. In the ocular tests the reaction in three of the five cases was not appreciably delayed, but was rather mild; the other two were negative. The subcutaneous test was negative to the above five patients. In forty-six perfectly healthy adults ten proved positive to Von Pirquet; six of these did not show until about forty-eight hours; four reacted in twelve hours' time. Eight out of forty-six responded to this ocular test. Six tests were only very mild. Five only showed with the Moro out of the forty-six

tests. Two of the cases gave a severe test, while the rest produced a delayed and mild reaction. The subcutaneous test was applied to the forty-six subjects, and after the third injection three reacted mildly. These three had given one negative and two prompt positive reactions with the Von Pirquet. With the ointment test, identical results happened as in Von Pirquet. In the ocular, all three reacted promptly.

Apparently the results obtained by Liginere's test is the same as that of Moro's except, possibly, it may not be so delicate. More comparative tests should be made in order to draw definite conclusions.

The Stich reaction and the Mantoux intradermal test have been used by us a number of times, but no comparisons with the other tests have been recorded.

COMPARISON OF HUMAN AND BOVINE SCARIFICATION TESTS.

Detre first suggested a differential tuberculin reaction, by which he attempts to differentiate between the bovine and human type of infection by the differences in reaction to tuberculin, prepared one from bovine, the other from human cultures. In our investigations we used the following technique: Ten per cent solutions were employed and six scarifications were made, two inches apart, three parallel with each other. In two of the abrasions (upper and lower) the human was placed, while in the other two the bovine, leaving the two middle scarifications for control.

In twenty cases of known tuberculosis we applied the above tests; found that ten reacted more strongly to the human type than to the bovine, and that four reacted more violently to the bovine than to the human, while in the remaining six, no difference could be discerned.

It was noticed in the above experiments

that where a reaction was present in one type, there would always be some reaction, however mild, with the other strain. In no cases have I seen this fail.

CONCLUSIONS.

1. The different results obtained by different workers in all probability depend upon the employment of solutions of varying strengths as well as defective technique in their preparation.

2. In the conjunctival test, if proper technique, proper preparations (using the weak solution first, and if negative, followed later by the strong) be used and the proper selection of cases, there is practically no danger in its employment.

3. In pyrexial cases, the subcutaneous injections are not applicable, while the superficial tests can be used without affecting their diagnostic value.

4. In cases without symptoms which react, it should be regarded as a danger signal and not a condition demanding active treatment.

5. It is generally believed that a delayed integumental test and a negative conjunctival reaction means a healed tubercle. The superficial tests are valuable in prognosis of manifest tuberculosis. A negative or delayed reaction indicates a serious sign. A prompt and vigorous reaction points to a much more favorable prognosis. All of the above signs, however, may fail.

6. I am of the opinion that the subcutaneous test is somewhat more reliable than the integumental and ocular tests. I am becoming more impressed with the Moro ointment test than any of the newer ones.

7. To obtain the best results from tuberculin from the diagnostic standpoint, I would advise the use of the three superficial tests—viz, (1) eye, (2) cutaneous, (3) ointment—be applied on the same patient at the same time, and if any doubt exists as to their interpretation, then follow it with the subcutaneous test.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

SPECIAL NOTICE TO COUNCILORS.

It seems proper at this time to call attention of the Councilors to the fact that in each district of the State, as shown by map on page 2, there are certain counties which are, as yet, unorganized, or in which the organization is not strong, and to urge upon each Councilor the importance of looking into the conditions of County Societies within his district, in order that he may bring into the organization those which are not, at present, organized and to strengthen those which, for any cause, may be weak. I would urge that each District Councilor investigate the conditions in each county of his district by writing to the Secretary of the County Societies and getting reports upon the condition of the organization in each county. On pages 2, 3, and 4 will be found a tabulated list of the County Societies as they exist at present. Make a list of the counties embraced in the district over which you preside, write a personal letter to the President and Secretary of each county in your district asking for a report. If there is any county in your district which does not appear in this tabulated list, it would be advisable to get in touch with several of the leading physicians in that county and see if you cannot organize a society in that county,

thus adding to the membership in your district and extending the influence of the State organization in those counties. The time seems to be propitious for entering upon this work, and it is hoped that every District Councilor will make an effort to increase the membership in his district and to strengthen the organization of the State Association. In some districts some of the counties which have been organized have allowed the organization to lapse, and in this way have lost touch with the State Association and the American Medical Association. This is evidenced by the fact that the State Secretary has inquiries from the Secretary of the A. M. A. concerning men who desire to join the A. M. A., and not only this, but inquiries concerning reciprocity with other States are referred to the State Secretary, and some of these have to be declined because of lack of county organizations. These conditions can be remedied only through local County Societies, and this work was intrusted to the District Councilors by the State Association. Hence I urge that you take up this work and promote the interests of the Association and the profession, in general, by a vigorous campaign of county organizations. I shall be glad to give any Councilor whatever

information I can concerning his district. Let us open a vigorous campaign with every assurance of success.

In order to aid in this matter, herewith is given the Councilor Districts, Counties composing them, and the name and address of the Councilor for each:

COUNTIES COMPOSING COUNCILOR DISTRICTS.

First District.

- S. W. Woodyard, M.D., Councilor ...Greeneville.
- | | |
|---------------------|------------------------|
| 1 Carter County. | 7. Hawkins County. |
| 2 Claiborne County. | 8. Johnson County. |
| 3. Cocke County. | 9. Sevier County. |
| 4. Grainger County. | 10. Sullivan County. |
| 5. Greene County. | 11. Unicoi County. |
| 6. Hancock County. | 12. Washington County. |

Second District.

- S. R. Miller, M.D., Councilor.....Knoxville.
- | | |
|----------------------|-------------------|
| 1. Anderson County. | 6. Knox County. |
| 2. Blount County. | 7. Loudon County. |
| 3. Campbell County. | 8. Roane County. |
| 4. Hamblen County. | 9. Scott County. |
| 5. Jefferson County. | 10. Union County. |

Third District.

- Geo. R. West, M.D., CouncilorChattanooga.
- | | |
|---------------------|------------------------|
| 1. Bledsoe County. | 9. Meigs County. |
| 2. Bradley County. | 10. Monroe County. |
| 3. Franklin County. | 11. Polk County. |
| 4. Grundy County. | 12. Sequatchie County. |
| 5. Hamilton County. | 13. Van Buren County. |
| 6. James County. | 14. Warren County. |
| 7. Marion County. | 15. White County. |
| 8. McMinn County. | |

Fourth District.

- L. M. Woodson, M.D., CouncilorGallatin.
- | | |
|-----------------------|-----------------------|
| 1. Clay County. | 8. Pickett County. |
| 2. Cumberland County. | 9. Putnam County. |
| 3. Jackson County. | 10. Rhea County. |
| 4. Fentress County. | 11. Smith County. |
| 5. Macon County. | 12. Sumner County. |
| 6. Morgan County. | 13. Trousdale County. |
| 7. Overton County. | 14. Wilson County. |

Fifth District.

- S. T. Hardison, M.D., CouncilorLewisburg.
- | | |
|--------------------|-----------------------|
| 1. Bedford County. | 5. Lincoln County. |
| 2. Cannon County. | 6. Marshall County. |
| 3. Coffee County. | 7. Moore County. |
| 4. DeKalb County. | 8. Rutherford County. |

Sixth District.

- G. C. Savage, M.D., CouncilorNashville.
- | | |
|-----------------------|----------------------|
| 1. Cheatham County. | 4. Robertson County. |
| 2. Davidson County. | 5. Stewart County. |
| 3. Montgomery County. | |

Seventh District.

- K. S. Howlett, M.D., CouncilorFranklin.
- | | |
|----------------------|-----------------------|
| 1. Dickson County. | 6. Lawrence County. |
| 2. Giles County. | 7. Lewis County. |
| 3. Hickman County. | 8. Maury County. |
| 4. Houston County. | 9. Williamson County. |
| 5. Humphreys County. | 10. Wayne County. |

Eighth District.

- E. K. McNeil, M.D., CouncilorJackson.
- | | |
|--------------------|----------------------|
| 1. Benton County. | 6. Henry County. |
| 2. Carroll County. | 7. Henderson County. |
| 3. Chester County. | 8. Madison County. |
| 4. Decatur County. | 9. McNairy County. |
| 5. Hardin County. | 10. Perry County. |

Ninth District.

- G. W. Penn, M.D., CouncilorHumboldt.
- | | |
|---------------------|-----------------------|
| 1. Crockett County. | 5. Lake County. |
| 2. Dyer County. | 6. Lauderdale County. |
| 3. Gibson County. | 7. Obion County. |
| 4. Haywood County. | 8. Weakley County. |

Tenth District.

- Louis Leroy, M.D., CouncilorMemphis.
- | | |
|---------------------|-------------------|
| 1. Fayette County. | 3. Shelby County. |
| 2. Hardeman County. | 4. Tipton County. |

**CONSOLIDATION OF MEDICAL SCHOOLS
IN NASHVILLE.**

FOLLOWING the trend of the times, the medical institutions in the city of Nashville have taken an important step toward the concentration of medical effort. Some time since it seemed advisable to members of the various faculties to bring about a union of the three institutions in Nashville, and some preliminary steps were taken looking to that end. The movement met with favor, and the impression prevailed and the hope was entertained that a consolidation of all interest could be consummated, but it was found that on account of certain conditions, which developed, that this object could not be obtained at this time. Since that

time, however, some members of the faculty of the University of Nashville withdrew from that institution and connected themselves with the Vanderbilt University, and the authorities representing the interest of the University of Tennessee and the University of Nashville arranged for a consolidation of these two institutions, so that, instead of three medical schools in the city of Nashville, there are now only two. By this step the interests of medical education have been strengthened and we hope that the institutions affected by this movement will meet with that success which they deserve.

DR. J. B. COWAN.

DR. COWAN, of Tullahoma, Tenn., died suddenly on Saturday morning, July 24th. His death was not a great surprise to his friends, for he had been in failing health for some time past.

Dr. Jas. B. Cowan was born at Fayetteville, Tenn., September 15, 1831. He was a son of Rev. Samuel Montgomery Cowan, whose father was one of the original settlers of Tennessee. His mother was a daughter of General Clements, of the Revolutionary War. Dr. Cowan was the only child, and his parents bestowed upon him every advantage in the way of an education that could be afforded by the times. After finishing his preliminary education, he began his medical studies under Dr. Bonner, of Fayetteville, Tenn. After this preliminary work he entered the medical department of the University of New York, from which institution he graduated. In 1858, after his graduation, he located for a time in Huntsville, Ala. Soon after this he moved to Memphis, Tenn., where he practiced. He entered the Confederate service as surgeon of Chalmers' regiment of Mississippi on March 27, 1861. In December of the same year he was transferred to General Forrest's staff and continued as surgeon un-

til the close of the war. He was with Forrest and participated in every important battle and won for himself a most lasting reputation as a surgeon in the field, in the camp, and in the hospital. Dr. Cowan was not only distinguished as a surgeon and soldier, but he was also known and beloved for his many personal traits. He was courteous, refined, and strong. He was ever ready to do for those in distress, and many there will be who will miss his tender, generous care. Dr. Cowan had been long identified with the medical profession in this State, but for the last few years his failing health had prevented him from taking an active part in the general medical affairs of this association. We have missed him in the past and will miss him more in the future.

REPORT OF THE STATE MEDICAL EXAMINERS.

WE have just received the Twentieth Annual Report of the Secretary of the State Board of Medical Examiners of Tennessee for the year ending June 1, 1909. The former Secretary of this Board, Dr. T. J. Happel, of Trenton, Tenn., having died on the 24th of May, 1909, Dr. C. A. Abernathy, of Pulaski, Tenn., was elected Secretary and is now in charge of that important position on the Board. Dr. Ambrose McCoy, of Jackson, Tenn., was endorsed for the position made vacant by the illness and subsequent death of Dr. Happel and is now a member of the Board. In this report we note some observations and comments upon the proposed amendment of law regulating the practice of medicine in the State of Tennessee. In this section appears some criticism of the part taken by the Chairman of the Committee on Public Policy and Legislation of the Tennessee State Medical Association, in his efforts to secure the passage of this new bill, which was a codification of all former

medical practice acts in Tennessee. The Chairman of this committee was acting upon definite instructions from the Tennessee Medical Association, which action was taken at Knoxville, Tenn., by the House of Delegates, April, 1908. This action was taken in accordance with a resolution offered by Dr. Crockett in the House of Delegates at the previous session of this Association, held in Nashville, April, 1907. See Transactions for 1907, page 35. Acting in accordance with this resolution, the committee, which had been appointed to act in conjunction with the State Board of Medical Examiners and State Board of Health to revise the laws governing these two Boards in the State, hoped that these Boards would take an active interest in this matter and thus put the medical profession in the State in touch with these two important departments. Accordingly, this matter was brought to the attention of these two Boards. The State Board of Health endorsed the idea of having the members of that Board appointed by the Governor from a list of nominees from the State Medical Association, but the State Board of Medical Examiners ignored the request of the committee to confer on this matter. See Report, pages 28 and 30, Transactions of 1908. The bill prepared by the State Board of Medical Examiners, which was presented to the Legislature at the last session, January, 1909, was one which met the approbation of the Committee on

Public Policy and Legislation in the main, with the exception of the manner in which the members of the Board should be appointed. Hence, the Chairman of the Committee on Public Policy and Legislation sought to have the bill amended to meet the views of the Tennessee State Medical Association. This was done. The Chairman and other members of the Committee used every legitimate influence to secure the passage of this bill. If there was any opposition to the bill from the profession at large on account of this amendment, it did not develop in that form. While the committee, as a whole, was making every effort to secure the passage of the whole bill, *there was but one single representative of the State Board of Medical Examiners*, that we recall, as having been present, to urge the adoption of this bill. The Tennessee State Medical Association did not seek the exclusive right of selecting the members of this Board, for the Eclectics in this State and the Homeopaths in this State were also provided for and were to make recommendations to the Governor for men to represent them on this Board, and the bill did not provide that the Tennessee State Medical Association should dictate to the Governor who should be appointed upon this Board, but simply sought to recommend competent men for this position; hence, we are surprised to see such a statement in an official report submitted by this Board.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., SEPTEMBER, 1909

No. 5

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEX, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee..... Shelbyville.

C. H. DAVIS, M.D., East Tennessee..... Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D.... Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan
GEO. H. PRICE, M.D..... Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D..... Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D.... Covington.

Alternate, J. D. BREWER, M.D..... Newbern

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman*..... Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury Cty.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. McREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Moshelm.
Secretary, S. W. WOODYARD, M.D.....Greenville.

HAMBLETON COUNTY.

President, W. E. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDENMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bollivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. McSWAIN, M.D.....Parls.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, Jno. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D.....Whitleyville.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson Cty.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. McNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

MORGAN COUNTY.

President, _____
Secretary, G. R. TODD, M.D.Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, K. E. ROGERS, M.D.....Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RIIEA COUNTY.

President, R. C. MILLER, M.D.....Evansville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

| | | | |
|--|-----------------|--------------------------------------|----------------|
| SCOTT COUNTY. | | UNICOI COUNTY. | |
| President, THOS. L. PHILLIPS, M.D..... | Newland. | President, DR. L. S. TILSON..... | Erwin. |
| Secretary, A. A. BAIRD, M.D..... | Helenwood. | Secretary, DR. E. B. HARRELL..... | Unicoi. |
| SEVIER COUNTY. | | WARREN COUNTY. | |
| President, P. E. WALKER, M.D..... | Sevierville. | President, E. L. MOONEYHAM, M.D..... | Rock Island. |
| Secretary, R. J. INGLE, M.D..... | Sevierville. | Secretary, T. O. BURGER, M.D..... | McMinnville. |
| SHELBY COUNTY. | | WASHINGTON COUNTY. | |
| President, G. B. THORNTON, M.D..... | Memphis. | President, W. T. KENNEDY, M.D..... | Johnson City. |
| Secretary, J. W. PRICE, M.D..... | Memphis. | Secretary, JOHN W. COX, M.D..... | Johnson City. |
| SMITH COUNTY. | | WEAKLEY COUNTY. | |
| President, J. J. BEASLEY, M.D..... | Pleasant Shade. | President, H. S. COPELAND, M.D..... | Palmer'sville. |
| Secretary, J. H. CHISM, M.D..... | Carthage. | Secretary, HUGH BARR, M.D..... | Dresden. |
| SUMNER COUNTY. | | WHITE COUNTY. | |
| President, JOHN R. PARKER, M.D..... | Gallatin. | President, B. S. RHEA, M.D..... | Bon Air. |
| Secretary, W. N. LACKEY, M.D..... | Gallatin. | Secretary, A. F. RICHARDS, M.D..... | Sparta. |
| TIPTON COUNTY. | | WILLIAMSON COUNTY. | |
| President, L. HILL, M.D..... | Covington. | President, H. P. COCHRAN, M.D..... | Franklin. |
| Secretary, B. V. DICKSON, M.D..... | Covington. | Secretary, K. S. HOWLETT, M.D..... | Franklin. |

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., SEPTEMBER, 1909

No. 5

EPIDEMIC MENINGITIS.

JOHN OVERTON, M.D., NASHVILLE.

EPIDEMIC Meningitis is an acute infectious disease affecting the meninges of the brain and cord and characterized by an irregular symptomatology. It has been recognized and described for over a century, and at various times it has been observed to occur in severe localized epidemics as well as in widely scattered cases unassociated apparently with any of its more severe outbreaks. It is a disease justly dreaded both by the public and the profession. It occurs more frequently in the winter and early spring and attacks usually children and young adults. Its predisposing causes are those that make the development of any disease more likely: poor nourishment, bad hygienic surroundings, prolonged exertion, exposure, and debauches. Its active cause is the *diplococcus intracellularis meningitidis*, first described by Weichselbaum, in 1887, and since then studied by various observers up to 1905, when Dr. Flexner carried out a most exhaustive investigation with reference to its biology and established the indisputable fact of its being the specific infecting agent in the so-called epidemic meningitis. Though there are recorded cases of a general septicemia produced by this organism, without any demonstrable lesion in the cerebro-spinal tract, these cases are rare. Practically in all cases recognized from

symptoms there is present a pathological process involving the pia-arachnoid membranes of the cord and brain. There may be only an acute congestion, but usually this is followed by an exudation of serum, some fibrin, numerous leucocytes and large polyhedral cells of connective tissue origin. The fluid may become purulent in character. In addition there follows an endarteritis, small hemorrhages, abscesses, and encephalitis. The roots of the cranial nerves and the spinal ganglia become involved and in cases of long standing, internal hydrocephalus may develop. In addition to the local lesions there may follow diseased processes in the various organs. Its clinical manifestations are very variable. It is generally divided into the common form, the malignant or fulminating form, in which the symptoms are most severe, producing death in a few hours; the abortive form, which is very active for a few days, then suddenly subsides; a mild form, in which the patient never appears very sick and frequently remains at his duties; an intermittent, and, lastly, the chronic form. In the common form the onset is usually sudden, with chill and high temperature. There may be vomiting of the projectile character, which, as a rule does not persist. Aching in the head, back, and limbs is comparatively constant. There may be convulsions, especially in

young children. Either suddenly or gradually there develops an irrational state of mind, which may be continuous or may alternate with lucid moments. Extreme symptoms are wild delirium, great restlessness, or deep coma. Patient is frequently irritable and generally needs to be closely watched and restrained to keep him in bed. The symptom that is most complained of by the patient is headache, both frontal and occipital; this may be so severe as to require large doses of morphia. On examination, we generally find the neck rigid and tender, head retracted, and the muscles of the back rigid. This rigidity of spine and retraction of head may go to the extreme of opisthotonos. Kernig's sign—that is, an inability to extend the leg when the thigh is flexed—is present in almost every case. On account of a hyper-sensitiveness and rigidity of muscles the patellar reflex is as a rule difficult to obtain. The plantar reflex is generally present and occasionally presents the irregularity known as Babinsky's sign, which is dorsal flexion of the first toe. The deep reflexes may be normal or there may be retention or incontinence. The abdomen is not usually retracted. When the attitude is typical the patient lies upon the side, head drawn back, arms crossed on chest, thighs flexed on abdomen, and legs flexed on thighs. The various evidences of involvement of the cranial nerves are found. There may be inequality of the pupils, paralysis of the external rectus, internal squint, and deafness. There may be diplopia, photophobia, and haziness of vision. Rarely the tongue protrudes to one side. Facial paralysis is fairly common and disturbance of sensation in areas supplied by the fifth nerve is at times present. Occasionally we meet with difficulty in swallowing. Herpes is as common almost as in pneumonia. In very severe cases we meet

with the macular purpuric rash, which has given to the disease the name of spotted fever. More often we meet with an erythema or an urticarial eruption. Except in bad cases, the temperature is, as a rule, not very high. It is generally irregular in course and often sub-normal. At first the pulse is usually strong and frequent, later may become slow. The respiration is usually not increased, unless there is involvement of the lungs. Where the pressure is great or the toxemia pronounced, the pulse may be either full and slow or running in character, and respiration may become Cheyne-Stokes in character. In such cases both incontinence of urine and feces are present. The complications which may be looked for are pneumonia, pericarditis, nephritis, arthritis, inflammatory changes of the various structures of the eye, inflammation in the middle ear or of the auditory nerve. The sequelæ which may be expected are blindness, deafness, and internal hydro-cephalus with mental defectiveness.

In epidemics and typical cases where many of the more prominent signs are present, diagnosis is easy and generally made, but in mild, irregular, and occasional sporadic cases the clinical diagnosis is not so easy and is frequently delayed as well as often overlooked. In many conditions there are meningeal complications, and often where no actual lesion exists, meningeal symptoms are present, such as in the various exanthemata, typhoid, malaria, influenza, pneumonia, and other acute intoxications. It is at times confused with epilepsy, hysteria, and uremia. Meningitis starting from a tubercular focus or one following injury to the brain, or coming as an extension from some infected area in close relation to the brain or indirectly from some point of infection remote, may need differentiation. In most cases, after

a careful elicitation of history and thorough physical examination and close observation of patient for a short time, we are able to eliminate most of the confusing conditions. There are times, however, when the diagnosis cannot be made without the aid of lumbar puncture and bacteriological examination of the fluid. This is particularly true with reference to tubercular meningitis and that due to pneumo-coccus infection.

When a patient is seen, usually a child or young adult, who may or may not give a history of aching for several days, and who is suddenly taken sick with chill or vomiting followed by pain in head, rigidity and tenderness in back of neck, slight or marked Kernig's, and some departure from the normal state of mind, then, without other more pronounced symptoms, after a careful history has been obtained and thorough examination made, lumbar puncture should be practised and a bacteriological examination of fluid made. The gross character and amount of fluid will establish the fact whether or not there is an inflammatory process present, but it will not determine the nature of the infection. If there is an excess of fluid, and it is perfectly clear, most probably it is a tubercular meningitis. Rarely the bacillus is found; generally there is a lymphocytosis, and the fluid may be infectious to the guinea pig.

The exudate may be cloudy, may contain flocculi, may be quite gelatinous on cooling, may be distinctly purulent, and is at times so thick that it will not come through needle without aid of aspiration. The nature of the infection then can only be determined by smear examination and culture tests. If an intra-cellular diplococcus is found, not staining by Gram's method, it is probably the meningo-coccus, but this would have to be proven by the cultural methods. If the diplococcus is gram-positive, it is probably the pneumo-

coccus, but this will again have to be proven culturally. This is the only way by which a correct diagnosis can be made. Though epidemics have been reported with a mortality as low as 20%, this is not the rule; the usual mortality varies from 60% to 80%, and is more grave in children below five years of age.

Death usually occurs within the first week. Formerly in cases recovering there were in many the unfortunate maiming sequelæ: deafness, blindness, and mental infirmity, which have helped to people our asylums for the care of those affected with the above afflictions. In New York, during 1904 and 1905, there were over four thousand cases, with a mortality of 75%. During the last two years there have been a large number of cases treated by the specific serum, in which the percentage of recovery has been 75%, the former mortality. It is still an unsettled question whether this disease should be classed as strictly contagious; it is not treated so by those who have the care of such cases. Occasionally several members of one family have contracted the disease, and often the diplococcus has been obtained from the nasal secretion of those nursing them. Following the experimentation upon monkeys, Dr. Flexner found the diplococcus in the nasal mucosa and believes their presence there due to extension from the brain along the peri-vascular spaces. It is believed by most physicians that the precautions taken in typhoid are safe and sufficient prophylactic measures in the care of this disease. Treatment was formerly simply sedative and supportive, opium and hot baths being the most useful agents. Mercury, potassium iodide, ergot, belladonna, and other drugs have at times been in favor. Several years ago diphtheria anti-toxin was used with some attributed good results. Lumbar puncture was then tried without any marked bene-

fit other than occasional relief from pressure symptoms.

Following upon the study of the biology of the diplococcus, in 1905, Dr. Flexner commenced his experiments upon monkeys and produced in them symptoms and lesions as found in the human subject. He then began experiments upon the value of various sera as preventive or curative measures in inoculated cases. By these experiments it was determined that an immune serum had the greater effect, and monkeys that formerly would have died from a certain dose were saved by use of this serum at the time of inoculation. He then began immunization of horses. Having obtained the serum, he advised its use in cases developing in man. It was first generally used by Drs. Ladd, of Cleveland; Dunn, of Boston, and Robb, of Ireland. Its prompt effect in the first cases treated awakened a hope and held out a promise for a field of great usefulness, which has since been fulfilled. In epidemics where the mortality was as high as 70% to 90%, cases treated early were followed by mortality as low as 25%. At first the dose was small and was at times given sub-cutaneously. Since then a wider experience has shown that it is better to give larger doses and only by the sub-dural method, as in this way the serum comes into direct and immediate contact with the seat of infection, and also because of the fact that such colloid material is slowly absorbed in the blood, if not materially changed. The serum is furnished free of charge, but a careful history with bacteriological examination is demanded in each case. In all suspected cases puncture should be done. Things necessary are a syringe holding 30 c. c., an aspirating needle two and one-half to three inches long, a test tube, and a glass graduate. The patient should be anesthetized, laid upon the right side,

hips drawn over to edge of bed, thighs and legs well flexed, and left shoulder depressed. Since there have been reported cases of secondary infection, the field of operation and hands of physician and all instruments should be carefully sterilized. With the forefinger of the left hand find a wide interspinous space about on the level with the crest of the ilium. This is generally between the third and fourth lumbar vertebræ. The needle is then inserted beside the index finger, a little to the right, and is passed up and in for about two inches until the canal is entered. The stilette is withdrawn and the fluid allowed to escape. If it comes out in a gush and full stream, stop it occasionally and observe carefully the condition of the patient, especially with reference to pupils, pulse, respiration, and skin. If the patient does well, withdraw all you can. If the fluid is cloudy and the serum is at hand, 30 to 45 c. c. of serum heated to body temperature should be injected. The injection should be carried on with every precaution, and the patient watched just as carefully as when the fluid was withdrawn. As a rule the injections are repeated daily for three or four days. After this we are guided by the general condition of the patient, gross and microscopic findings of fluid and the results of culture. From the careful work of many observers it has been found that, as a rule, the injection of the serum increases the phagocytosis, lessens the number and disintegrates the diplococci, changes their staining properties, raises the opsonic index, and causes a fall in the general leukocytosis as found in blood examination. Growths are obtained either less easily or the results of culture are negative. If after several injections these phenomena are observed and the mental condition of the patient is improved, then, despite the continuance of retraction of head, Kernig's sign, or eye

irregularities, we may rest awhile and watch. If convalescence is not speedy and gradual, then occasional punctures should be made, and if diplococci are found, the injections should be repeated. Best results have been obtained in cases where treatment was begun before the third day, though there are several cases of recovery reported where treatment was begun very late. Where the spinal fluid has cleared up, but marked symptoms persist, it has been advised by some to trephine, to draw fluid from lateral ventricles and inject the serum. It has been established that the serum has active bactericidal properties, but its antitoxic value is as yet undetermined. The last report of Drs. Flexner and Jobling embraces about four hundred cases, with 75% recovery.* In the great per cent of these cases recovery has been very prompt and few of them have had any lasting ill effects.

Before report of cases which follow I wish to express my thanks to all the gentlemen in connection with cases, their names being given with each report. I wish especially to thank the visiting physicians to the hospital for the liberty given me in treating and reporting cases, and Dr. Litterer for the amount of work he did with so much readiness and willingness, and Dr. Flexner for his kindness in furnishing me the serum so promptly upon request.

CASE No. 1. PHYSICIAN, DR. MASON GUILL.

Robert Rush, white, aged 17.

History of Illness.—Seemed to be in good health up to December 24, when he began to complain of headache and pains generally over the body. Had a chill and vomited. Was restless and irritable, and in eighteen hours became irrational. Admitted to hospital December 25. Was noisy and irrational and restless to such an extent that he required restraint.

*"Since writing of paper a larger number, embracing about 800 cases, has been reported."

There was rigidity in the neck, and both Babinsky's and Kernig's signs were marked. He had retention of urine, sweated rather freely, and there was a decided macular and purpuric rash over the body. There seemed to be some disturbance in control of the right extremities. Puncture was done and 40 c. c. of purulent fluid were withdrawn, which, on examination, showed intra-cellular diplococci. In the next two days there was not much change. The temperature and pulse gradually went up and general condition grew worse. Was practically moribund when fluid arrived on December 29. However, puncture was done and fluid was withdrawn by aspiration, since it was too thick to run. Forty-five c. c. of serum were slowly injected without any appreciable resistance being felt. But this procedure was promptly followed by death of patient, seemingly produced by pressure at base of brain. Examination of fluid by Dr. Litterer showed gram-negative intra-cellular diplococci, and cultures were obtained which responded to the characteristics of the meningococcus.

CASE No. 2. CITY HOSPITAL. SERVICE OF DR. E. G. WOOD.

Charlie Moore, colored, aged 19.

History of Illness.—On Monday, the 18th, patient felt well and did his work. During the afternoon he drank a good deal and got drunk. He went to sleep at 10 p. m.; woke up at 3 a. m. with cramps in the legs, and had to walk about for half an hour to get relief. Tuesday morning he felt chilly for several hours. In the afternoon he vomited several times and complained of headache. This part of history gotten from patient after recovery. His friends say that on Monday night he refused to talk and complained of headache. He lay in bed all day Tuesday and talked irrationally. Upon admission he did not give the appearance of being very sick, but acted a little peculiarly. When spoken to directly, appeared to understand and acted in accordance. Pupils were equal and reacted alike. Nothing was found in examination of heart, lungs and abdomen, with the exception of a full bladder and a quickened respiration. Reflexes not carefully tested; 3:30 in the morning temperature went up to 103, but dropped to normal in several hours. Patient was not entirely at himself, but asked to be allowed to get up to go to toilet. Some sordes on lips. Nothing found in lungs. Slight rigidity and tenderness in neck. No Babinsky and only a suggestion of Kernig's

sign. Was restless and noisy all night. Patient had to be restrained to prevent him from getting out of bed. On the 21st the temperature went up to 101. Pulse and respiration were also up. The probability of meningitis was suspected, but puncture was delayed. Up to now he was able to answer all questions and to give his name. Kernig's sign and rigidity of neck had developed. During the night was kept quiet by a dose of morphia and hyoscin. Next morning, Friday, the 22d, patient was much worse. Irrational, temperature up; pulse and respiration both rapid, reaching, respectively 150 and 60. Puncture was done under anæsthesia and 40 c. c. of cloudy, purulent fluid withdrawn and 40 c. c. of serum injected. Before puncture pupils were equal and small, but didn't appear to react. Leucocyte count was 22,000, with 93 per cent. polynuclear.

On examination of the fluid there was a thick sediment of pus in the test tube. Smears made by Dr. Litterer revealed gram-negative intra-cellular diplococci, and out of 1,000 cells counted 46 per cent. were phagocytes, each containing on an average of six cocci. In the same fields were counted 1,820 extra-cellular cocci. Positive cultures were obtained. During the evening of the 22d there was reaction of pupils to light. Was a little noisy in the early part of the night, but was quieted by a dose of morphine and hyoscin. Took fluid and seemed to swallow without difficulty. Asked for water, called nurse by name, and seemed fairly rational. Sweated freely for two hours. Next morning was much better. Temperature, pulse and respiration down. Brighter mentally. Urination still involuntary. Herpes on nose and lips. Some cough, with no expectoration. Signs of consolidation found in the lower right lobe, with a suggestion of trouble in the lower left lobe. Did well during the day. In the afternoon 20 c. c. of slightly cloudy fluid, tinged with yellow, were withdrawn and 30 c. c. of serum injected. Leucocyte count 13,400, 83 per cent. being polynuclear. Examination of the fluid still showed gram-negative diplococci, with a phagocytosis of 30 per cent., and an average of three cocci to each phagocyte. In the same fields only 54 extra-cellular cocci were found. Cultures were negative. On Sunday, the 24th, still improving. Neck not quite so rigid or tender. Kernig's sign not so marked, but still decided. Signs of consolidation over both bases behind still evident. Mental condition clearer: asked to be allowed to read a magazine. Leucocyte count 12,800.

Rested fairly well during the night. Was out of serum, so no puncture was done. Next day much improved in every way. Leucocyte count, 11,000. Mind apparently perfectly clear, and enjoying nourishment. During the night was annoyed by cough, which was quieted by use of codeine. Tuesday, 26th, 60 c. c. of perfectly clear fluid withdrawn and 30 c. c. of serum injected. Fluid ran out freely in a full stream, and a great deal of disturbance followed. Respiration increased to 60 and pulse slowed to 50. Left pupil was widely dilated, was unresponsive, and remained so for about ten minutes. Right was also dilated, but not so much. These symptoms improved, following injection of serum. There was complete relaxation and paralysis of sphincter. Examination of fluid showed no organisms, and cultures were negative. Did well during the afternoon; was troubled with cough during the night. The next two days did well, except for the annoying cough, respiratory difficulty during Thursday, and some dullness at base of lungs. From now on up to the 31st, when he went home, improvement was gradual.

CASE No. 3. CITY HOSPITAL. SERVICE OF DR. E. G. WOOD.

Laura Benson, colored, aged 16.

History of Illness.—Three days before admission, in the morning, she first noticed headache and sore throat. Had difficulty in swallowing; vomited anything she swallowed. Had a chill on each day. Has had pains all over body. Has been restless, appearing at times irrational. On examination there was found a young woman, well developed and nourished. Not very sick in appearance, suffering some, and a little irritable. Pupils equal and react alike. Some congestion of pharynx. Heart, lungs and abdomen normal. Reflexes normal, except patellar, which could not be obtained because of rigidity. Was hypersensitive. Kernig's sign only slightly developed. Pain, tenderness and rigidity in muscles in back of neck. Could not be forcibly flexed, whole body being raised from the bed in attempting to flex neck. Scalp tender. On night of admission was fairly quiet, though she complained some, especially when moved. Next morning Kernig's sign well developed; head could not be moved, either laterally or anteriorly, because of great rigidity and tenderness of neck. Seemed to swallow without any particular difficulty. Deep reflexes normal. Mental condition apparently clear. In the afternoon punc-

ture was done under anaesthesia, 40 c. c. of milky fluid withdrawn, and 30 c. c. of serum injected. Leucocyte count was 15,000. Examination of the fluid by Dr. Litterer showed gram-negative intra-cellular diplococci, with a phagocytosis of 15 per cent. in a count of 1,000 cells, each containing on an average of five cocci. In the same fields were counted 1,120 extra-cellular cocci.

Positive cultures were obtained without any difficulty. After injection patient seemed a little more comfortable and rested well during the night. Temperature ranged between 101 and 99. On the 23d condition was about the same until afternoon, when temperature went up a little and she became more restless. Headache was severe; there was marked Kernig's sign and rigidity of neck. Puncture done, 52 c. c. of slightly milky fluid withdrawn, 30 c. c. of serum injected. Leucocyte count 8,800, 78 per cent. being polynuclear cells. On examination of fluid, gram-negative intra-cellular diplococci were found and showed phagocytosis of 32 per cent. each phagocyte containing an average of four cocci. In the same fields only 25 extra-cellular cocci were found. On culture only a few colonies were obtained. Rested well during the night. Next morning was much improved. Neck not so tender, but was still rigid. Leucocyte count was 10,600. Since admission there had not been very much sweating, no vomiting, perfect control over deep reflexes. Mental state apparently clear. No symptoms referable to the eye or ear. Monday, the 25th, much improved in every respect. All along has passed a good quantity of urine, containing a large quantity of albumen. Leucocyte count was 8,020. Temperature, pulse and respiration normal since the 24th. Rested well during the day and night. Next day continued to do well. In the afternoon 45 c. c. of perfectly clear fluid were withdrawn and 30 c. c. of serum injected. Up to bedtime she complained of great deal of pain in head and back. Was quieted by morphine and slept well during the night. From now on improvement was steady, and patient left the hospital feeling well on February 1. Examination of last fluid showed no organisms, and cultures were negative.

CASE No. 4. CITY HOSPITAL. SERVICE OF DR. E. G. WOOD.

Clifford Kirkpatrick, aged 13.

History of Illness.—For several nights be-

fore admission, said to have been a little restless. Two nights before admission he went to a supper; ate very freely, but didn't appear to have any bad effects from it. Next afternoon he had a chill and felt so badly that he went into the house of an acquaintance. Seemed very weak; was hypersensitive; head was thrown back; he complained a good deal and would often scream out when moved. Tossed about on bed all night and was wildly delirious during the next day. Has involuntary urination and is practically, completely irrational. Admitted to hospital January 25. Temperature, 100½; pulse, 100; respiration, 24. On examination was found a well-nourished negro boy, lying for the most part upon one side, with arms across chest, thighs and legs both flexed and spine rigid. When patient is moved the least bit, appears to be in pain and screams out. All questions are answered in the affirmative. Pupils equal and react alike. Tongue coated. Tonsils enlarged and pharynx congested. Slight rigidity in all the muscles. Heart, lungs and abdomen normal, except for slight retraction of the abdomen. Plantar reflex present. Patellar not obtained. Involuntary urination. Neck rigid and head slightly retracted. On attempting to force flexion, entire trunk is raised from bed. A differential blood count showed 92% polynuclear cells. Next morning temperature was down to normal, he was quieter and seemed a little more rational. Puncture was done under anaesthesia and about 10 c. c. of cloudy fluid withdrawn and 25 c. c. of serum injected. There was a leucocyte count of 23,000. Examination of the fluid by Dr. W. A. Oughterson showed gram-negative, intra-cellular diplococci and cultures were positive. Seemed some better after injection. Neck still rigid and Kernig's sign more decided. A little more rational; in the afternoon asked for something to eat and seemed to enjoy the milk given him. Temperature never went above 99½. Rested fairly well during the early part of the night. Asked for milk at 11 P. M. At 12 became restless, but otherwise did not appear to be in bad condition. Was quieted by a small dose of morphine and slept the rest of the night. At 7 A. M., when temperature was to be taken, found dead. After death another spinal puncture was made and only about 10 c. c. of cloudy fluid withdrawn. The fourth ventricle was punctured and about 5 c. c. of the same character of fluid obtained.

NO. 5. CASE OF CEREBRO-SPINAL MENINGITIS. ATTENDING PHYSICIAN, DR. T. G. POLLARD.

Florence Pursley, female, white, aged 7.

Previous History.—With the exception of the common diseases of childhood, has always had good health.

Present History.—While at school, on January 26, patient complained of slight pains in the legs and back of neck; no chills or nausea at this time. Ate supper at the usual hour, retired at bedtime, and rested well during the night. On the morning of January 27 the pains in legs and neck were a little more marked. Thinking they were of no significance, the mother sent the child to school. While on her way to school the pains became more aggravated, causing her to cry out. She remained in school a few hours, when she was sent home because of her suffering. Soon after reaching home she vomited. During the evening her physician was called. He found her in bed, with legs flexed and with some retraction of head and rigidity of neck. She was at times restless and at other times stuporous. The ordinary reflexes were present. When aroused her understanding seemed good. Kernig's sign was slightly developed in both legs. Temperature, 104, by rectum; pulse, 126; respiration, 36. On the morning of the 28th pulse was 110. Besides alternate restlessness and stupor, there was at times muttering delirium. Reflexes were absent. The patient complained of not being able to see very well. At noon lumbar puncture was done without anesthesia; 18 c. c. of cloudy fluid were withdrawn and 25 c. c. of serum were injected. Blood examination and an examination of the fluid by Dr. W. A. Oughterson showed a leucocyte count of 30,800, 91 per cent. being of the polynuclear variety. Intra-cellular gram-negative diplococci were found on examination of the smear, and a characteristic growth was obtained from culture on Loeffler's serum. During the afternoon and evening of the same day there was no change in the temperature. The pulse was at times up to 150. Retraction of neck and Kernig's sign were more marked. Complained of photophobia. Vomited several times during the day. Examination of the urine showed a large quantity of albumen. Next morning temperature 102; pulse, 140; respiration, 32. Mental condition better. Kidneys and bowels acting. At noon lumbar puncture done under anesthesia; 22 c. c. fluid, more cloudy than the first, were withdrawn, and 25 c. c. of serum injected. Leucocyte count done and no

change in the examination of fluid found. The new symptom developed was opisthotonos. Next morning delirium was more marked and there was picking at the bed clothes. Temperature, 105; pulse, 144; respiration, 32. At noon puncture was done, 25 c. c. of cloudy fluid were withdrawn and 25 c. c. of serum were injected. Blood count, 30,000; polys, 86 per cent. Growths were not so marked. January 21 general condition was improved. At noon puncture was done, 28 c. c. of almost clear fluid withdrawn and the same amount of serum injected. Leucocyte count, 20,000; polys, 79 per cent. Growth still less on Loeffler's serum. No diplococci were found within the cells, but some without. February 1 reflexes returned; temperature, normal; pulse, 130; respiration, 24. Mental condition very good. Retraction of head and Kernig's sign very marked. Temperature 102 in the afternoon. Leucocyte count, 13,000. February 2 condition not so good as on day previous. At noon puncture was done and 30 c. c. of clear fluid withdrawn and 30 c. c. of serum injected. White blood count, 20,000, 86 per cent. polys.

February 3—Examination of the blood during the next three days showed gradual fall in leucocyte count and the per cent. of polynuclear cells. Though for some time there was a marked retraction of the neck, improvement was steady and gradual, and at the present time patient is as well as she ever was.

CASE NO. 6. CITY HOSPITAL. SERVICE OF DR. J. A. WITHERSPOON.

Ewen McGinnis, colored, aged 30.

History of Illness.—First complained of feeling badly about three weeks ago, but was able to go about until five days ago, when he first complained of severe pain in the left shoulder, neck, head and back, cramps in legs and abdomen, and also had a chill. Examination showed a young man of fair size, rather thin and poorly nourished. Mental condition clear; not very sick looking; apparently in a good deal of pain. Pupils equal and reacted alike to light; conjunctivæ dry and reddened. Tongue coated. Heart, lungs and abdomen normal. Kernig's sign present in both legs. Neck tender and rigid. Difficult to obtain patellar reflexes. Plantars present. Deep intact. Though meningitis was suspected, because of perfectly rational state of patient's mind, puncture was not done on first day. He complained of pain a good deal in the frontal and occipital region, neck, back and hips. Temperature was nor-

mal on admission. Went up to a little over 100, but dropped again in a few hours. Pain was so severe during the night that he had to be quieted by morphia. Next day suffering was still intense. Puncture was done under anaesthesia and 45 c. c. of slightly cloudy fluid, containing flakes, were withdrawn, and 30 c. c. of serum injected. Pulse slowed a little during the withdrawal of fluid and quickened during the injection of serum. Differential leucocyte count showed 97 per cent. polymorphs. Examination of fluid by Dr. Litterer showed gram-negative intra-cellular diplococci, and there was a phagocytosis of 4 per cent., each containing on an average three cocci. In the same fields, in which 300 cells were counted, there were only 60 extra-cellular cocci. After return to consciousness patient was not relieved, but suffered so much that he required morphia. No change next day; 40 c. c. of cloudy fluid withdrawn and 30 c. c. of serum injected. White blood count, 8,800. Examination of fluid showed 5 per cent. phagocytic cells and no extra-cellular cocci. Cultures still positive. Patient suffered again very much after injection. On the 13th 15 c. c. withdrawn and 30 c. c. given. Leucocyte count, 11,500, 78 per cent. polymorphs. After injection he suffered a great deal with pain in head and neck. Seemed almost hysterical. Kernig's sign very much less marked. Next day no change. Occasional dose of morphia necessary. On the 15th 50 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. After this patient acted in same way as at last puncture, but pain was most intense in neck and between shoulders. No particular change in any of the symptoms. During the next three days there was no change. On the 18th, for the first time, he seemed to be a little irrational. Next day he was irrational. Condition was worse. Beginning to show emaciation; 35 c. c. of nearly clear, slightly yellow, fluid withdrawn; 30 c. c. of serum injected. Leucocyte count, 17,250. Examination of the fluid showed no organisms and cultures were negative. Restless during the night. On the 20th 40 c. c. of milky fluid withdrawn and 30 c. c. of serum given. Rigidity in neck and Kernig's sign more marked. Some sweating during the day and night. Next day much worse. Would not swallow anything; 45 c. c. of cloudy fluid were withdrawn and 30 c. c. of serum given. Leucocyte count, 19,000. Examination of fluid was negative. Patient gradually grew worse, dying next morning at 7 o'clock.

CASE No. 7. CITY HOSPITAL. SERVICE OF DR. J. A. WITHERSPOON.

Sam Scott, colored, aged 50.

History of Illness.—Said to have first complained two weeks ago of pains in limbs, chest and neck, and high fever. Became unconscious on the night before admission. Examination showed a middle-aged colored man of large frame and very muscular. Very sick in appearance; unconscious, but very restless. Pupils equal and react. Some thickening of arteries. Sweating. Neck rigid, but not very tender. Kernig's sign not well developed. Incontinence of urine, examination of which showed albumen and granular casts. Examination was not very satisfactory, because patient was very strong and could not be held still a minute. Temperature was $103\frac{1}{2}$; pulse, 120; respiration, 40. Puncture was done under anaesthesia; 20 c. c. of cloudy, purulent fluid withdrawn and 30 c. c. of serum injected. Leucocyte count was 19,800. Examination of the fluid by Dr. Litterer showed many intra and extra-cellular gram-negative diplococci, and positive cultures were obtained. Patient was very restless during the night, having to be restrained and given morphia. Next day, the 20th, temperature dropped to normal, as well as pulse and respiration. Patient could give name and looked much better. Still, however, was restless; 50 c. c. of cloudy fluid were withdrawn and 45 c. c. of serum injected. Leucocyte count was 29,500, with 90 per cent. polymorphs. Asked for water during the night. Sweated very freely, was fairly quiet and rested well after midnight. Next day doing fairly well, still incontinent and a little more rational. Neck rigid and tender. Some sweating. Temperature went up to 102; pulse and respiration a little faster; 30 c. c. of cloudy fluid withdrawn and 30 c. c. of serum injected. On the 22d 30 c. c. of fluid withdrawn and 30 c. c. of serum injected. Patient was quiet, but looked very badly. No decided change in symptoms. Muscles soft and flabby. During next two days he gradually grew worse. Emaciation was very noticeable. Rigidity in neck and Kernig's sign still present. Mental condition bad. Temperature ranged between 101 and 103; pulse was irregular, being at times above 150; respiration, between 50 and 65. On the 24th leucocyte count was 26,350. Punctured and 15 c. c. of fluid withdrawn and 30 c. c. of serum injected. All fluids were examined by Dr. Litterer, with the result of an apparent greater phagocytosis, but at all times a great many extra-cel-

lular diplococci were found and positive cultures were obtained. Occasionally patient appeared to understand something. Condition daily grew worse, with free sweating, muttering, delirium, incontinence of urine and feces. Death occurred on the morning of the 28th.

CASE No. 8. PHYSICIAN, DR. WM. D. SUMPTER.

Mariana Corrieri, white, aged 27.

History of Illness.—On the night of February 20 physician was first called. She complained of headache and of having fever. These symptoms, with aching of the bones and restlessness at night, continued with increasing severity. Labial herpes and sordes appeared. February 24 occipital headache, tenderness in the back of the neck, Kernig's sign and internal squint strongly suggesting meningitis. February 25 she was admitted to the hospital, with temperature 101, pulse 112, respiration 24. She was very restless and talking irrationally. Both pupils reacted to light, but the right was the larger. There was internal squint on right side. Lips were cracked and bleeding, and sordes present. Tongue foul and thickly coated. Heart, lungs and abdomen normal. Some rigidity and tenderness in the back of neck. Kernig's sign on both sides only fairly marked. Plantar reflex present, but showed the irregularity known as Babinsky's sign. Examination of the urine was negative. At 5 p. m. puncture was done without anesthesia, and 20 c. c. of fluid, containing flakes, were withdrawn, and 30 c. c. of serum injected. Soon after removal the sediment was quite gelatinous. Patient was restless, but was quieted by dose of morphine. White blood count was 8,250. Examination of the fluid by Dr. Litterer showed gram-negative intra-cellular diplococci, which grew on Loeffler's serum and responded to the usual characteristics of the meningococcus. Out of 500 polynuclear cells 10 per cent. were phagocytes, each containing on an average of four organisms. In the same fields there were found 125 extra-cellular organisms. Next morning general condition much improved, entirely rational and was quiet. At noon puncture was done and 15 c. c. were withdrawn and 30 c. c. of serum injected. Patient was much excited by the procedure, and was restless and noisy during the afternoon and night. Slept little and complained a great deal of pain in back. Leucocyte count, 12,000. The examination of fluid showed positive culture, phagocytosis was increased to 25 per cent. each phagocyte containing three organisms. There

were not so many extra-cellular organisms. Next day there was not so much rigidity in neck nor pain in head. Inequality of pupils, internal squint still present and Kernig's sign well marked. Rested well during night. February 28, condition improved. Kernig's sign and rigidity in neck not so marked. Attention first called to diplopia and some haziness of vision in the right eye complained of. At noon was anesthetized, 35 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Leucocyte count was 8,000. On examination of the fluid, no extra-cellular cocci were found; phagocytosis was 5 per cent.; cultures were positive. March 1, doing very well. At noon was anesthetized, 15 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Leucocyte count, 9,650. Examination of fluid showed no intra- or extra-cellular cocci, and cultures were negative. Up to this time the temperature had been irregular, ranging from normal to 101. From now on to the 6th it was practically normal, and there was gradual, but decided, improvement in all the symptoms. On the 6th the temperature went up a little, and she complained of severe headache and aching in the bones. But the neck rigidity and Kernig's sign were not increased. On the 7th she was better, but still complained of pains in the bones, especially in the wrists and elbows. An erythematous rash had appeared on the extensor surface of arms and legs. On the 8th she still complained of pains in joints and bones, and had free sweating about forehead. For the next few days improvement was gradual, and she left the hospital on the 11th. Since then she has been seen and is up doing her work and is feeling comparatively well. Still slight squint in the right eye, but it is doubtful whether or not this is an old defect.

CASE No. 9. CITY HOSPITAL. SERVICE OF DR. J. A. WITHERSPOON.

Andrew Williams, colored, aged 30.

History of Illness.—Admitted to the hospital March 14 with history of having been drinking very heavily for two or three days. On day of admission had a chill, followed by headache, fever and general aching. Mental condition seemed clear up to 2 p. m., when he first became irrational, which later developed into a comatose condition. Examination showed a young colored man, restless and unconscious. The right pupil was widely dilated and did not respond to light. There was paralysis of the right external rectus and ptosis of the right

upper lid. Seemed to have lost sensation in right side of face and arm and some power of motion. Patient tossed about wildly and had to be restrained. There was practically no rigidity in neck and no Kernig's sign. Plantar and patellar reflexes were absent. There was retention of urine, mouth and lips were dry, and sordes present. At 11 p. m. patient was anesthetized, puncture done and 50 c. c. of fluid withdrawn and 40 c. c. of serum injected. Leucocyte count was 28,000. Examination of fluid by Dr. Litterer showed gram-negative diplococci, and positive cultures were obtained. Before withdrawal of first fluid there was Cheyne-Stokes respiration. After withdrawal of fluid this disappeared, and right pupil came down almost to same size as left. Patient was restless in the night, crying out loudly at times, but was quieted by morphia. Next day there was slight improvement. Still no Kernig's sign, but tenderness in the neck was present. Right pupil was again dilated, but other paralytic symptoms were improved. Patient talks, but most of the time his talk is irrational. Appears to be totally deaf; 50 ounces of urine obtained by catheter, examination of which was negative. At noon puncture was done, 30 c. c. of cloudy fluid withdrawn and 30 c. c. of serum injected. Leucocyte count was 28,950, and positive cultures obtained from fluid. Has not taken anything by mouth, and was restless and noisy during the night. Next day pupils about equal and react. Ptosis improved. Paralysis of right external rectus improved. Patient cannot hear, but appears to understand some things. Rigidity of neck present. Plantar reflex present. Kernig's sign absent and retention of urine still persists. At noon 40 c. c. of fluid withdrawn and 30 c. c. of serum injected. Leucocyte count, 13,500. In the afternoon took some water and milk and asked for more. Was fairly quiet during night. On the morning of the 17th was for the first time incontinent of urine. No particular change in other symptoms. At noon 50 c. c. of fluid were withdrawn and 45 c. c. of serum injected. Leucocyte count, 14,000. Rejected nearly all nourishment. In the next two days there was no change for the better, and he seemed to grow gradually more emaciated. Leucocyte count, 16,000. Neck rigid and retracted and turned to one side. On the 20th was weaker. Puncture was done, 40 c. c. of cloudy fluid withdrawn and 30 c. c. of serum injected. Leucocyte count, 5,200. Patient took small amount of milk. Up to this time the temperature had

not been above 99, except once. Today it rose to 102, then gradually subsided again. His condition gradually grew worse and emaciation became extreme until death occurred on the 21st.

CASE No. 10. CITY HOSPITAL. SERVICE OF DR. J. A. WITHERSPOON.

George Williams, negro, aged 50.

History of Illness.—Up to present illness has been in good health, working daily in a brick-yard. Sunday he apparently felt perfectly well. Monday he went to work, but came home in the afternoon feeling badly. Complained of headache, backache and pains generally over the body. He had a chill and vomited several times. He did not rest well during the night and at times was irrational. Remained in the same condition during Tuesday and Wednesday. On Wednesday night was brought to the hospital. Examination showed a colored man of middle age and average height. He was unable to hear and was irrational. His pupils were equal, though very small, but reacted. There was not paralysis of any of the eye muscles. The arcus senilis was distinct in both eyes. No trouble found in heart, lungs or abdomen. There was some arterial sclerosis. There was slight rigidity in the neck, but Kernig's sign was not found on first examination. Plantar reflex present. There was retention of urine. Later in the night Kernig's sign was present in one leg. Next day it was present in both legs. There was marked rigidity and tenderness in neck, and he would cry out when flexion was attempted. Deafness appeared absolute. He could be gotten to swallow scarcely anything. When head was handled he would tell you to stop because it hurt. Puncture was done under anesthesia and 50 c. c. of cloudy, purulent fluid withdrawn and 30 c. c. of serum injected. Leucocyte count was 12,400. Examination by Dr. Litterer showed gram-negative, diplococci and positive cultures were obtained. Urine examination was negative. Patient was restless during the day and had to be restrained to prevent him from getting out of bed. Temperature was normal. Friday was doing badly. Temperature subnormal. No particular change in symptoms, except he was much weaker and coma was deeper. He seemed to be unable to swallow. Sweating was quite free. At 11 a. m. pulse was running in character and could scarcely be counted. Was anesthetized and 40 c. c. of cloudy fluid, slightly yellow, withdrawn, and 30 c. c. of

serum injected. Pulse was much slower following this procedure. Examination of this fluid showed very few diplococci, and only a few colonies were obtained on culture. Next day, March 27, was decidedly worse. There was involuntary urination and defecation. Was very weak and emaciation was extreme; 45 c. c. of slightly purulent yellow fluid were withdrawn and 30 c. c. of serum injected. On examination of fluid it was very difficult to find any organisms and cultures were negative. Death occurred several hours later.

CASE No. 11. CITY HOSPITAL. SERVICE OF DR. J. A. WITHERSPOON.

Thomas Martin, colored, aged 19.

History of Illness.—Admitted March 30. Up to three days ago was feeling well, when he first complained of headache, backache and pains generally over the body. Vomited several times, has been very restless and at times irrational. Examination showed a young negro man, well nourished in appearance. Restless and noisy. When directly addressed, answered intelligently, but, when left alone, talked at random. Pupils were equal and reacted. There was paralysis of the external rectus on the right side. Ptosis of the right upper lid and facial paralysis upon the right side. Bladder was distended. Rigidity of the muscles of the neck and back. Superficial reflexes apparently normal. Kernig's sign slightly developed on the left side. Temperature below 100. Pulse 110. Respiration a little increased. Puneture done, 50 c. c. of cloudy fluid withdrawn and 45 c. c. of serum given. Leucocyte count was 15,200. Examination of fluid by Dr. Litterer showed positive cultures of the diplococcus. Very few organisms were found on smear examination. On March 31 there was more retraction of neck and Kernig's sign was well developed. Seems a little more rational; still has retention of urine; 40 c. c. of cloudy fluid withdrawn, 30 c. c. of serum injected. Leucocyte count, 11,000. Temperature up to 101. Very few organisms found on smear examination and cultures were negative. On April 1 was doing well; 20 c. c. of very slightly cloudy fluid obtained and 30 c. c. of serum injected. Cultures were negative. In the afternoon the temperature went up to 104. Next morning dropped to normal. After this for several days there was extreme retraction of head and very marked Kernig's sign. All other symptoms were improved. His mental condition was clear. He had control over the deep reflexes;

he took nonrishment well. From now on improvement was rapid and steady, and he walked out of the hospital April 10 feeling well, with the exception of a little weakness.

CASE No. 12. CITY HOSPITAL. SERVICE OF DR. W. E. McCAMPBELL.

Hattie Turner, colored, aged 19.

History of Illness.—She was apparently in fair health up to one week ago, when she first complained of aching in the head, back and extremities. She had a chill, followed by high fever and restlessness. For the past several days she has been for the most part irrational, but when aroused would answer most questions intelligently. On examination was found a young negro woman, well nourished, very sick, restless, and, when left alone, would talk irrationally. There was some retraction of head, and face was turned toward the right. Complained of pain in head and back of neck. Tongue was coated. Lips dry and parched. The right pupil was the larger, but both responded to light. There were no other eye irregularities. Babinsky's and Kernig's signs were present upon the right side. There was a little tenderness over the lower portion of the abdomen. At 6 p. m. was anaesthetized and only 10 c. c. of very thick purulent fluid were withdrawn and 30 c. c. of serum injected. Examination of this fluid by Dr. Litterer showed gram-negative intra-cellular diplococci and positive cultures were obtained. This fluid was so thick that standing an inch in a test tube at least four-fifths of it would be solid sediment. Temperature on admission was 101; pulse, 142; respiration, 32. There was incontinence both of urine and feces. Her condition gradually grew worse. The temperature reached 107 by axilla at 3 a. m., a little before her death.

CASE No. 13. PHYSICIAN, DR. WM. D. SUMPTER.

Baby Corierri, white, aged 2.

History of Illness.—Was feeling perfectly well and playing about the streets late in the afternoon. Gave history of having eaten bananas and at 9 p. m. began to be fretful and restless. The child was given oil, and as condition was not considered serious until child began to have convulsions, physician was not called until morning, when child was dying. The mother of this child was at the same time in the hospital with meningitis. The spinal fluid was obtained after death and examination

made by Dr. Litterer, and the diplococcus was found and positive cultures obtained.

CASE No. 14. PHYSICIAN, DR. A. N. HOLLABAUGH.

Mary Woodruff, colored, aged 18.

History of Illness.—Came home from work on Sunday, complained of severe headache and took tablets for relief of same. Remained dressed, but lay about on bed most of the day. Monday morning the doctor was called. At that time she complained of headache and severe pains in the leg. Temperature, 102; pulse, 120. She was not nauseated. Conjunctivæ were inflamed. There was congestion of naso-pharynx and some bronchitis. Diagnosis at the time was Influenza. Next morning temperature and pulse about the same and she was very restless. Neck was retracted and rigid. Meningitis was then suspected. Kernig's sign was not tested. Condition gradually grew worse, and in the afternoon she was in a comatose state. Pupils were unequal and respiration was almost Cheyne-Stokes in character. Puncture was done and about 40 c. c. of cloudy fluid were withdrawn. This was examined by Dr. R. L. Jones, City Bacteriologist, and gram-negative intra-cellular diplococci were found. Patient died a few hours after puncture.

CASE No. 15. PHYSICIAN, DR. W. H. WITT.

G. G. White, aged 14.

History of Illness.—For four or five days had been suffering with rhinitis. On Saturday morning had a chill, followed by headache, general aching and fever. At 6 p. m. was first seen by his physician. Headache was severe, especially in frontal region. There was swelling over the right frontal and temporal regions. An abscess of the frontal sinus was suspected. Dovers powder was given and irrigation of nose ordered. Had a restless night and seemed delirious. At 10 a. m. on Sunday was semi-conscious. Head was retracted and legs flexed. Kernig's sign was fairly well developed on both sides. Pupils equal and reacted to light. Temperature, 102; pulse, 120. At noon spinal puncture was attempted, but failed because of short needle. At this time temperature was 106 by rectum. Deep stupor rapidly succeeded, and patient died at 2:30 p. m. Puncture was then made and cloudy fluid obtained, which was examined by Dr. C. E. Brush. Gram-negative intra-cellular diplococci were found and positive cultures obtained.

CASE No. 16. CITY HOSPITAL. SERVICE OF DR. W. E. McCAMPBELL.

Jake Martin, colored, aged 57.

History of Illness.—Admitted to hospital April 11, four days before he first complained of headache, backache and aching in the extremities. Also had some pain in lower portion of abdomen and back of neck; has vomited every day and has been unable to retain any nourishment. Patient has been restless and unable to sleep, and would frequently get out of bed and walk about the room. He has, however, apparently been perfectly rational. He was being treated by his physician for Influenza. But finally made the diagnosis himself and asked to be taken to the hospital because of the fact that his son, Case No. 11, had just returned from the hospital cured of meningitis. Examination showed a negro man 57 years of age, of fair size and development. He seemed perfectly rational and intelligent, but was restless, tossing about on bed and wanting to get up. He did not appear to be in much pain. The left pupil was slightly larger than the right, but both reacted. Heart and lungs normal. Some arterial sclerosis, a little tenderness in lower portion of abdomen, rigidity in neck and no retraction. Both Kernig's and Babinsky's signs were present. Temperature on admission, 98.4-5; pulse, 80; respiration, 24. Patient anesthetized at 3 p. m., puncture done and 35 c. c. of cloudy, purulent fluid withdrawn and 35 c. c. of serum injected. Examination of fluid showed the diplococci and positive cultures were obtained by Dr. Litterer. Patient rested well during the night and says he feels a little better. He was able to get up and walk about without any assistance. Had marked rigidity in neck, and head is slightly retracted and turned to the right. Kernig's sign is well developed. Did not take much nourishment. Was comfortable during the morning, and during the afternoon complained of some pain in the neck. Puncture was done, 35 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Leucocyte count was 10,000. Examination of fluid still gave positive results. Patient had a comfortable night. April 13 condition remained unchanged. April 14 temperature went up to over 102. Though head is still rigid, he can move about without much trouble. Kernig's sign still very well marked; 30 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Leucocyte count was 8,400. Examination by culture and only very small growths obtained from one

tube. Complaining of some pain in frontal region. On April 15 temperature reached 103. Patient appeared rational, though he lay quiet, with eyes closed most of the time. Complained of some pain in back and side of neck, and head is kept turned to one side. Next day no change in symptoms, except falling temperature; 25 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Only one small growth obtained. Patient took nourishment a little better and enjoyed the eggnog given him. April 17, for the first time, he appeared a little irrational. Temperature was irregular, but not above 100. Rigidity in neck and Kernig's sign diminished; 25 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Patient rested very well during the night. Next day appeared better, though he was still a little irrational. Results from last cultures were negative. From now on improvement was steady, but slow. On the 23d he was able to walk out of the hospital, though he was quite weak and a little unsteady in gait. There was practically no rigidity in neck and Kernig's sign was absent.

CASE No. 17. PHYSICIAN, DR. C. E. BRUSH.

John B. Stockell, colored, aged 13.

History of Illness.—On night before admission, after taking a bath, patient complained of feeling chilly. Next morning he vomited, complained of headache and pains in limbs. In the afternoon he became restless and mildly delirious. This gradually grew worse until he had to be carefully watched to keep him in bed. At 8 p. m. he sat up and voided his urine. There was pain, tenderness and rigidity in back of neck, and Kernig's sign was present. Temperature was 102 by axilla, and pulse a little slow. Patient admitted to hospital about 11 p. m. same night. On examination was found a young boy of good development and well nourished. Was not very sick-looking, but was delirious and very restless. Could not be gotten to answer any question. Pupils were equal and reacted to light. There were no other eye symptoms. Tongue was coated. Heart, lungs and abdomen were normal. Patellar reflex then taken when asleep and said by physician to have been a little exaggerated. Plantar reflexes normal and deep reflexes under control. Head was slightly retracted and neck rigid and tender. Kernig's sign was very well marked on both sides. Patient had to be restrained to prevent him from getting out of bed. Temperature was 102½; pulse, 70; respiration,

24. Patient was anesthetized, 45 c. c. of cloudy fluid withdrawn and 30 c. c. of serum injected. Following this procedure there was involuntary defecation. Examination of blood and fluid by Dr. Brush showed a leucocyte count of 23,000 gram-negative inter-cellular diplococci and positive cultures. During the night patient was quieted by morphia, but kept restrained. Urination was involuntary. Next morning temperature had dropped to normal. He could give his name and was much better in every respect. He took nourishment well, and about noon got out of bed and went to the toilet. In the afternoon about 15 c. c. of cloudy fluid were withdrawn and 30 c. c. of serum injected. Leucocyte count, 30,000, and negative results were obtained from culture. Continued to do well and rested quietly during the night, regaining control over the deep reflexes. April 13 temperature went up to 101, but the patient continued to do well. There was less rigidity in neck and Kernig's sign was not so well developed. Next day temperature was up again a little, but came down. Patient was quiet and perfectly rational. Retraction of head was extreme, but there was no tenderness, and patient was doing very well. Puncture was done and about 20 c. c. of almost clear fluid were withdrawn and 30 c. c. of serum injected. White blood count was 19,300, and negative results were obtained from cultures. After this puncture he complained a good deal of pain in head for a while. Next day there was quite extensive herpes on the lips. From now on improvement was steady, and, though retraction of head and Kernig's sign persisted for several days, they gradually disappeared. Patient walked out of the hospital April 21 feeling perfectly well.

CASE No. 18. CITY HOSPITAL. SERVICE OF DR. W. E. McCAMPBELL.

Henry Moorman, colored, aged 14.

History of Illness.—Admitted to hospital about 10 p. m., April 16; temperature, 102½; pulse, 100; and respiration, 24. And gave the following history: April 10, six days before admission, patient began to complain of headache of a violent character. Next day his headache became more severe, and also complained of backache and was nauseated, but didn't vomit. He continued about the same until five days after, on Friday, when his headache became worse and his neck became a little rigid and he vomited. He was still able to walk about the room. Two days after this he was

brought to the hospital, during which time there had not been any marked change. He was able to walk to the ambulance. At 11 p. m. he was anesthetized and 50 c. c. of slightly cloudy fluid withdrawn and 35 c. c. of serum injected. Physical examination showed a young boy well nourished and developed and intelligent looking. Perfectly rational, his head slightly retracted; able to walk, but gait a little staggering. No eye symptoms. Slight rigidity in muscles in back of neck. Kernig's sign present in both legs to a slight degree. Babinsky's sign also present in both feet. Leucocyte count, 8,100. Diplococci very difficult to find on smear examination, but positive cultures obtained. At 5 a. m. temperature was 105; pulse, 112. After a dose of morphine, patient rested quietly during the night. Next day condition not much changed, except for drop in temperature almost to normal, which rose again to 103. Complained of some headache; was restless. At noon puncture was done, 35 c. c. of slightly cloudy fluid withdrawn and 30 c. c. of serum injected. Negative results were obtained from this fluid. From now on improvement was rapid and steady, and patient walked out of the hospital on April 21 feeling perfectly well.

CASE No. 19. PHYSICIAN, DR. E. M. SANDERS.

Italian boy, 7 years of age.

History of Case.—Was taken suddenly with chill and vomiting; temperature soon became high, and delirium soon followed. Kernig's sign was present and rigidity of neck was marked. Puncture was done and 20 c. c. of an almost perfectly clear fluid were withdrawn. Do diplococci on smear examination were found, but positive cultures were obtained by Dr. Litterer. Fifteen c. c. of the serum were injected, and improvement was so sudden and steady that no further punctures were made.

CASE No. 20. CITY HOSPITAL. PHYSICIAN, DR. W. M. McCABE.

Colored boy, aged 14.

History of Case.—Was admitted to the hospital with suggestive history, symptoms and signs. Puncture was done and a milky fluid was withdrawn, examination of which showed diplococci, and positive cultures were obtained by Dr. Litterer. This procedure was repeated several times, with injection of serum each time. Recovery was steady, rapid and complete.

SUMMARY.

Since December 25, 1908, here in Nashville, there have been seventeen cases proven bacteriologically. Of these, three were untreated and all died. Of the twelve that were treated, seven died; but of these seven, two were practically moribund at time of injection, and one died in less than twenty-four hours after first injection. Five recovered, four of these by crisis and one by lysis. Recovery was complete in all but one, and this one still has internal squint in one eye. Of the treated cases that died, all died within the first week. Of the seventeen cases, five were white and twelve colored. There was one child two years old and one seven; there were three men over fifty, and the others were between the ages of ten and thirty. There were various early diagnoses, typhoid and influenza being especially frequent. In three cases the retraction of head was even more marked after the convalescence had begun. There was a history of premonitory symptoms in three, and history of recent intoxication in three. The symptoms noted were: Headache, rigidity and tenderness in neck, and Kernig's sign, in all; Babinsky's in four; herpes in four; internal squint in two; paralysis of external rectus in two; haziness of vision in two; diplopia in one; irregular pupils in four; conjunctivitis in two and photophobia in one; facial paralysis in three; convulsions only in one, a child of two years; chill in nine; vomiting in four; typical attitude in two; irrational state of mind, from that of mild degree to active delirium, requiring watching and restraint, in all but one; albumen in urine in three; retention or incontinence early in all but four, present before death in all; sweating free in five; typical rash in one, and urticarial rash in one; in four emaciation before death was extreme; there was deafness in two; there were two instances of associated cases; one case was complicated with pneumonia; one was of the sub-acute form; the pulse in the bad cases was irregular and slow or running; the temperature was not continuous, and was not above 104, except in one case; there was Cheyne-Stokes respiration in two. In all that died the leucocyte count remained high, and polymorphs were increased in some to as high as 95 per cent. In the cases that recovered, as a rule, the count gradually fell. The fluid was cloudy in all, purulent in most, and in a few so thick that it would hardly run through needle. The largest amount of fluid withdrawn from any one case was 270 c. c., and the most serum injected

was 210 c. c. The usual dose of the serum was 30 c. c., but on several occasions it was 45 c. c. The effect of the serum on the fluid was generally to increase phagocytosis, to decrease number of diplococci, to lessen their viability as shown by cultures, and to cause a clearing of fluid in most cases of recovery after two or three doses. In cases dying the last cultures were negative in all but one. In cases recovering the last cultures were negative in all but one, and in this one the growth was very slight. We have had no experience in treating the very young; otherwise our observations have led us to the same conclusions arrived at by others who have used this method of treatment. In early cases, especially in young adults, we may look forward with confidence to a very high percentage of recovery. Of course, age, physical condition and length of time from onset of symptoms until treatment is begun materially affect the prognosis. Considering the twelve cases treated, the percentage of recovery would be 42 per cent. Eliminating the two moribund and the one that died within the first twenty-four hours, it would be 55 per cent. Since reading of the paper there have been treated five cases, all of which recovered. For report of these, see Cases 16, 17, 18, 19, and 20 above. Our final percentage of recoveries, then, after eliminating the three before designated, is 71.4 per cent.

DISCUSSION ON THE PAPER OF DR. OVERTON.

DR. WILLIAM LITTERER, of Nashville:

Mr. President: I have been greatly interested in the study of our recent epidemic of cerebro-spinal meningitis, in that I have studied every case, except possibly three. Every case was confirmed bacteriologically and culturally. In the first five cases guinea pig inoculation was resorted to, since there was some doubt as to the exact etiology of the disease.

I have been much impressed with the results obtained by the Flexner serum. Some of the cases in which it was used acted like magic. The serum does not act similarly to that of the diphtheria antitoxin, in the way of neutralizing the toxin, but it acts by destroying the germ only when the serum comes in direct contact with it. In other words, the serum has bacteriolytic powers, with very little antitoxic properties. This may account for the great difference in the results between the American way of using the serum and the German method of using it.

Kolle and Wasserman, of Germany, are mak-

ing a serum identical to the Flexner serum, which they inject subcutaneously. They report negative results, which are not to be wondered at, since the serum has little antitoxic powers. It may be of value to not only inject intraspinally, but subcutaneously as well.

One case I would like to cite that was of particular interest, in that the meningo-cocci on first examination of the spinal fluid were present by the thousands. An injection of Flexner's serum was given. Next day the germs in the spinal fluid had greatly reduced, and by the third day had entirely disappeared. Cultures were made of the fluid on the fourth day, with negative results. The spinal fluid by this time was perfectly clear; in fact, so far as could be discerned, was absolutely normal. Yet the patient was doing badly, and had persistent intense headaches, which morphine and other sedatives could not relieve. These head symptoms continued until about the eighth day, when the patient died. I am strongly of the opinion in this case that the meningo-cocci had extended into the ventricles of the brain, out of the reach of the serum which acted so promptly and effectively in the spinal canal. I am further of the belief that had an injection of the serum been made into the ventricles, thus allowing bacteriolysis to have taken place, the patient would, in all probability, have recovered.

DR. W. M. McCABE, of Nashville:

It was my good fortune or misfortune to have been in New York during the epidemic of 1904-05. I consider cerebro-spinal meningitis one of the most pernicious diseases with which we have to deal. The mortality in that epidemic, as Dr. Overton has stated, was 76 per cent., and only 20 per cent. of those recovering recovered entirely without some sequelæ.

I agree with the essayist except in regard to anaesthesia. I do not believe that anaesthesia is ever necessary to perform spinal puncture, but, on the contrary, I think it is sometimes exceedingly dangerous. Most of these cases begin abruptly, and many of them die within twenty-four hours. Some of them are very slow in developing cerebral symptoms, and symptoms pointing to the brain do not develop for several days. I have seen several multiple cases—in one family two, in another three, and in another four. The intermediate host has not been discovered, but a healthy individual may transmit the disease, although he does not contract the disease himself. In other words, the germs may be in his naso-pharynx, and he may trans-

mit the disease in this manner. In two instances the urine was found to contain sugar. In these cases a differential diagnosis between diabetic coma, cerebral meningitis and compression from hemorrhage was necessary. Spinal puncture is a simple procedure, and is not dangerous. I have seen as much as 50 or 60 c. c. of fluid withdrawn without any detriment whatever. These patients were never anesthetized. A petechial eruption occurred in 30 per cent. of the cases. Herpetic eruption occurred in 11 per cent. of the cases. Various other eruptions were present, such as erythema nodosum, etc. I believe herpes is more frequent in this than in any other disease, malarial fever, pneumonia, included. In some instances herpes was found upon the lips only; in others on the chin; in still others it appeared as a general rash. Kernig's sign, while exceedingly valuable, is not infallible; it was present in 95 per cent. of the cases. We also noticed in that epidemic that clear cerebro-spinal fluid was a worse prognostic sign than one loaded with pus. In the clear cerebro-spinal fluid it seemed as though nature was unable to throw out its leucocytes and protect the patient, while in the pus fluid nature had thrown out its leucocytes. Every kind of treatment was resorted to in that epidemic, except the Flexner serum, which was not discovered then. Large doses of diphtheretic antitoxin were given without any avail.

Dr. W. H. WITT, of Nashville:

There is no subject that has been brought before this Association of more importance, in one sense of the word, than the one dealt with in this paper. This disease, as we know, has been very fatal, and its sequels have been very severe in those cases that have not terminated fatally. For that reason the subject deserves special interest. A discovery like this to an Association like this may mean much or very little. Ordinarily, physicians who live in moderate-sized towns or in the country are apt to think that because they are far removed from bacteriologists and microscopists they are seriously handicapped. But that is probably less true of this disease than a great many others. Puncture of the spine is a simple thing, and, if done properly, is without danger. What I want to say is this: When these cases present themselves, and a diagnosis of meningitis can be made with reasonable certainty or clearness, any physician in the country, or elsewhere, by following the proper guide, can draw off fluid and inject the serum, and should do so. Of

course, he must have the serum to inject, but he can get that furnished to him within a reasonable time to do his puncturing and his injection. The injections can be made with a simple apparatus, and because a practitioner lives in a small town is no reason to let the opportunity go by to save these patients. Otherwise they prove fatal or are followed by a great deal of morbidity. Puncture and injection are easy, and as soon as the diagnosis is made everyone can supply himself with the fluid in a reasonable time.

Dr. J. M. TROUT, of Jackson:

I was interested in one point in this paper, and that was in reference to Dr. Overton saying in three cases there was a history of acute alcoholism. I think in cases of acute alcoholism in the young you will get a certain degree of meningitis that will even, in some instances, give you retraction of the head. It will give the patient fever and wild delirium. Of course, we all know in chronic alcoholism we have the old "Wet Brains" and low-grade forms of meningitis; but that should not be confused with the fever. The point I wish to make is that in a young adult or in a male 17 years of age there are some cases that might be confused with acute meningitis following indulgence in alcohol.

Dr. OVERTON (closing the discussion):

In answer to Dr. Jones' question, I will say that of the two cases of meningitis he injected, one of them, as I was told by the physician in connection with the case, was in deep coma. Of course, in a condition like that there would not be any trouble in making puncture without an anæsthetic. Without anæsthesia one is liable to do some damage, for the reason that the patient is apt to toss about the bed, or you are liable to break off the needle, or get some blood in it which will clog it up. In one or two instances the patients were greatly excited without anæsthesia and suffered for several hours. Dr. Witt asked me to mention a point which he intended to bring out, and that is, in cases that are not epidemic in form, injection of the serum does not do any harm. Of the patients that died, the first case was very active and had all the clinical symptoms. He was practically moribund when the injection was made and died immediately afterwards; 45 c. c. were given, and, though given comparatively slowly, produced too much pressure, thus precipitating

the end. The second case was a boy, 13 years of age, who seemed to be doing well, of whom we had some hope for recovery, but he died suddenly in less than twenty-four hours after the first injection. The third case was chronic in form, and was the one Dr. Litterer mentioned as having been a case suitable for injection into ventricles. The fourth case was a man, 50 years of age, who gave a history of chronic alcoholism, and whose symptoms were very active. The fifth case was a man who came in drunk. Before the first injection he had Cheyne-Stokes respiration and unequal pupils, but this condition cleared up and he went along fairly well for a week, without, however, any improvement, and then died. The

next case was a man over 50, who did not respond very well to the serum, and died at the end of two days. The next case was a woman, 17 years of age, who had been sick a week, and was sent to the hospital with a diagnosis of typhoid fever or pelvic abscess. Puncture was resorted to and the fluid found so thick that it would hardly run. She died the same night. Her temperature in the axilla before death was 107 degrees.

I hardly think that anyone here, after having heard the results of treatment in our cases and the reports made by Dr. Flexner, will doubt the benefit which may be derived from this treatment, or will fail to avail themselves if opportunity to use it should arise.

COCCIDIOIDAL GRANULOMA AND BLASTOMYCOSIS IN THE CENTRAL NERVOUS SYSTEM.

NEWTON EVANS, M.D., NASHVILLE.

DURING several years in the recent past there have been reported numerous cases of two very closely related groups of an unusual form of chronic infectious disease belonging pathologically to the granulomata and resembling in many features tuberculosis. I refer to coccidioidal granuloma and blastomycosis. The cases of coccidioidal granuloma have been described mostly in California, and by far the greater proportion of the cases of blastomycosis have been studied in Chicago. The most striking biological feature of these organisms is that, in the tissues, they always appear in the one case as sporulating organisms (coccidioides), in the other as budding fungi (blastomyces); while in artificial culture they have an entirely different appearance, both organisms invariably growing as molds.

COCCIDIOIDAL GRANULOMA.

In 1892 Posadas and Wernicke¹ in

¹Wernicke, R., *Les Protozoaires*, *J. de Microg.*, Paris, 1891, XV.

Buenos Ayres, South America, first reported a case of the disease now called coccidioidal granuloma, and the organism of which is named *oidium coccidioides* by Ophuls, of San Francisco, who has carefully studied more of these cases than any other observer. As many as seventeen or eighteen cases of this disease have been collected.² It is a chronic infectious disease, having a great resemblance clinically and pathologically to systemic tuberculosis. The lesions, which are principally abscesses and tubercles, have been found in practically all the organs of the body. The course of the disease varies from three months to a number of years. It seems to be invariably fatal, although the individual lesions may recover. In the majority of the cases the primary focus of infection apparently is the lungs. Other cases are seen in which the first lesions appear in the skin or other superficial structures. But the later cases invariably show pul-

²Brown, Philip King, *Journal of A. M. A.*, vol. 48, p. 743. Coccidioidal Granuloma.

monary lesions. In those cases beginning in the lungs, some later develop skin lesions while others do not.

In coccidioidal granuloma a typical spherical, double contoured organism is always found. It varies in size up to 30 micro-millimeters, or even more, in diameter, and in the tissues always multiplies by endogenous sporulation, and budding forms (blastomycetes) have not been seen. However, in the pus from abscesses, typical budding organisms have been observed.³ In artificial culture external to the body it always grows as a mold, an abundant growth of mycelia being produced.

The first and the most extensive work on the morphology of this organism was done by Rixford and Gilchrist.⁴

The geographical distribution of the observed cases of this disease is remarkable. Outside of the one case reported from South America all the patients have been seen in California or have lived in California, and the great majority of them have resided at one time or another in the San Joachin Valley.

Out of these eighteen cases only two (possibly three) have been reported as showing lesions of the central nervous system.

SYSTEMIC BLASTOMYCOSIS.

In 1894 Gilchrist⁵ described the first case of blastomycetic infection of the skin, and gave it the name of "blastomycetic dermatitis." Since that time as many as one hundred or more cases of blastomycetic infection of the skin hav-

ing uniform clinical and pathological characteristics have been reported. At least two such cases have been observed and studied in Nashville by Dr. Litterer, and one of these he has reported.⁶

In the same year (1894), in Germany, Busse and Buschke reported a case of systemic infection with an organism which is recognized as being practically identical with the parasite in blastomycetic dermatitis. In America the first systemic case of blastomycosis was reported in 1892 by Walker and Montgomery in Chicago.⁷ Since that time, and including the case of Busse and Buschke, and one case by Curtis, in the old country,⁸ there have been reported twenty-two cases of undoubted systemic or generalized infection with the blastomycetes. (Montgomery and Ormsby also report five additional cases which probably belong to the same category, but which have not been so proved by autopsy.⁹) Most of these cases have been fatal, but at least two have recovered. These systemic cases are very similar in their clinical aspect and gross pathology to those mentioned above as coccidioidal granuloma.

It is a remarkable fact that a large proportion of the cases of blastomycosis, both cutaneous and systemic, have been observed in Chicago.

Of the twenty-two systemic cases, five have been reported as having lesions of

⁶Litterer, Wm., Blastomycosis, with report of a case, *Southern Medical Journal*, vol. 1, No. 5.

⁷J. W. Walker and F. H. Montgomery. (F. H. Montgomery, *Journal Cutan. Diseases*, 1901, XIX 26.) J. W. Walker and F. H. Montgomery, *The Journal A. M. A.*, 1902, XXXVIII, p. 867.

⁸Curtis. Contribution a l' Etude de la saccharomyces humaine. *Ann. de l'inst. Pasteur*, 1906, vol. 10, p. 449.

⁹Frank Hugh Montgomery and Oliver S. Ormsby. *Arch. of Int. Med.*, vol. 2, No. 1. Systemic Blastomycosis.

³*Ibid.*, see No. 2.

⁴Rixford, Emmet, and Gilchrist, T. C., *Johns Hopkins Hospital Report*, vol. 1. Two cases of protozoan (coccidioidal), infection of the skin and other organs.

⁵Gilchrist, T. C. Communication to the American Dermatological Association, May 30, 1894.

the central nervous system, three having focal lesions in the substance of the cerebrum and cerebellum, one a destructive process of the spinal cord, and one, the case of Curtis, having a clinical meningitis.

The parasites found in the purely cutaneous affection and in the systemic blastomycoses are identical, although certain variations are seen in the characteristic of the organisms in the different cases. They are always seen in the tissues and in pus from abscesses as spherical, sometimes oval organisms, eight to twenty mikrons in diameter, having the characteristic refractive capsule, giving them the so-called double contoured appearance. Budding forms are constantly seen in the tissues and in the pus from the abscesses. In artificial culture it grows as a mold with typical mycelia and conoidal spores.

The organisms of coccidioidal granuloma and of blastomycosis are very similar, both in their appearance in the affected tissues and in artificial culture. The most striking and apparently essential difference is in the fact that in the coccidioidal granuloma the forms seen in the tissues are always multiplying by sporulation, and never by budding, while in the blastomycetic cases the multiplication is typically by budding. Whether this morphological difference is unequivocal evidence that the two organisms belong to two distinct classes is open to question for the following reasons:

1. In the pus from abscesses in some of the coccidioidal cases typical budding forms are seen, although in the tissues these forms are always absent.³

2. The marked similarity in the characteristics of their growths upon artificial media.

3. In one case of systemic blastomy-

coses, LeCount¹⁰ observed in a large tubercle of the cerebellum undoubted sporulation forms, though in adjacent portions of the same lesion only the budding forms could be found.

4. In one of the earlier cases of systemic blastomycoses, a study of which was reported by Otis (see ref.¹¹) and myself in 1903,¹¹ the lesions in the internal organs of an inoculated guinea pig showed the typical sporulation forms identical in appearance with those seen in the coccidioidal cases.

These facts indicate an exceedingly close relationship between the organisms in these two classes of disease, and it is possible that the two organisms are simply variations of an identical form. Ormsby⁹ expresses the opinion that in a given case there is probably usually present more than one strain of these parasites, which accounts for the so-called pleomorphism seen in the cultures. In regard to the relation of these two organisms, Jordan, in his recently published text book on bacteriology, says¹⁶:

"A singular and more fatal disease of a similar character has been observed in the San Joaquin Valley, on the Pacific slope of the United States. Although the organism found was at first thought to be a protozoan and the disease is still termed 'coccidioidal granuloma,' there is no doubt that the parasite concerned is a blastomycetes or 'oidium.'"

Ophuls says of the relation and classification of these organisms: "The resemblances between lesions and parasites in blastomycetic dermatitis and those in coccidioidal granuloma seem close enough

¹⁰E. R. LeCount and J. Myers. *Journal of Infectious Diseases*, vol. 4, No. 2, pp. 187-200. Systemic Blastomycosis.

¹¹F. J. Otis and Newton Evans. *Journal of A. M. A.*, October 31, 1903. The morphology and biology of the parasite from a case of systemic Blastomycosis.

¹⁶Jordan, *Gen. Bact.*, p. 421.

to my idea to classify them together, perhaps after Ricketts' suggestion, as oidiomycosis."¹²

Hekteen¹³ says with reference to this point: "Systemic blastomycoses and coccidioidal granuloma are caused by closely related varieties of organisms that Ricketts and Ophuls would place with the oidia."

PREVIOUSLY REPORTED CASES OF COCCIDIOIDAL LESIONS IN THE CENTRAL SYSTEM.

1. Ophuls. *Jour. of Experimental Medicine*, vol. 6, Nos. 4, 5 and 6, 1905 (Case 2). German, age 50, laborer. Clinical history not obtainable. Comatose on entrance to hospital. Paresis of muscles of right side of face. Remained comatose, or partially so, till time of death, which occurred after six days. No record of any skin lesions. Autopsy: "Small scars in apices of both lungs. Pleuritic adhesions. Purulent infiltration and (pseudo) tuberculosis of paricardium at base of heart. Chronic paricarditis, with complete obliteration of paricardium. (Pseudo) tuberculosis of meninges, spleen and both kidneys. Ependymitis chronica nodosa." The principal changes in the brain were a purulent lepto meningitis at the base of the brain, particularly in the fissure of Sylvius, the pia mater being infiltrated with pus and containing numerous submiliary sized yellow nodules. Nodules also seen at the bottom of the longitudinal fissure, and in the ependyma.

Microscopic—pia mater much thickened; shows many small abscesses. Abscesses contain fibrin, nuclear fragments, polymorphonuclear leucocytes, and peripherally, lymphocytes, plasma cells, large

mononuclear cells, also giant cells of the Langhans type, and others with the nuclei grouped at the center. Other lesions are composed of plasma and other mononuclear cells and giant cells, no polymorphonuclear cells being present. Parasites are present in these abscesses and nodules, often within giant cells. These organisms are empty shells and sporulation forms mostly. Other affected organs show the same parasites. No tubercle bacilli can be found.

2. Orphuls. *Journal A. M. A.*, 1905, vol. 45, p. 1291 (Case 7). Male, age 19. Sick four weeks previous to entering hospital. Remained in hospital about three months, when he died. High remittent fever. Marked rigidity of neck. Kernig's sign present. At intervals in stupor, and at times delirious. Twelve days before death unequal pupils and complete paralysis of left abducens muscle developed, and next day paralysis of bladder. No cutaneous lesions. Autopsy: Basilar meningitis, with many disseminated nodules in Sylvian fissures; very chronic inflammation of pia mater of spinal cord with thickening three to four mm. in diameter. In thickened pia, many miliary abscesses. Marked softening of the cord. Coccidioidal parasites, adult and sporulation forms, demonstrated in the meninges. In this case there was also present chronic caseation in the adrenals containing tubercle bacilli. No tubercle bacilli in meninges.

CASES OF SYSTEMIC BLASTOMYCOSIS WITH LESIONS IN THE CENTRAL NERVOUS SYSTEM.

1. Curtis.⁸ Male, age 20. Multiple tumors rapidly developing on various parts of body. Some of these tumors formed abscesses and ruptured. Great numbers of blastomycetic organisms found. Cultures and animal inoculation successful. Patient died of meningitis of

¹²Howard T. Ricketts, *Journal of Medical Research*, vol. 6, No. 3. Oidiomycosis (blastomycosis) of the skin and its fungi.

¹³Ludvig Hekteen, *Journal of A. M. A.*, vol. 49, p. 1071. Systemic Blastomycosis and Coccidioidal Granuloma.

undetermined nature, after about one year.

2. Montgomery and Ormsby (Case 7), *Archives of Internal Medicine*, August 15, 1908, p. 1. Also LeCount and Myers, *Journal of Infectious Diseases*, vol. 4, No. 2, 1907, p. 187. (Later report by LeCount, *Journal of Nervous and Mental Diseases*, March, 1909.) Polish laborer, age 33. Illness began February, 1904; death, August, 1906 (two and one-half years). First symptoms were noticed in the chest. In June, 1904, first cutaneous lesion was seen. Entered hospital February, 1905. April, 1905, blastomycetes demonstrated in sputum. Much improved in hospital, leaving in July, 1905. Returned to hospital after two months, having relapsed. A gibbous tumor of dorsal spine present. Blastomycetes demonstrated in feces. Autopsy: Blastomycotic broncho-pneumonia. Blastomycosis of peribronchial lymph nodes, pleura, the sub-pleural and retropharyngeal tissue, the liver, kidneys, and colon (?), spinal column (dorsal), external spinal dura, cerebellum, joints, skin and subcutaneous tissue. A fistulous opening extends from right pleural cavity to spinal canal at third dorsal vertebra.

A blastomycotic nodule of right lobe of cerebellum, resembling solitary tubercle 4.5x3.8 cm. This nodule shows a large proportion of necrotic tissue in meshes of well-stained tissue. Many submiliary abscesses seen. Masses of granulation tissue within this mass contain numerous small parasites and forms which are evidently sporulating. LeCount, in a later report,¹⁴ describes a similar but smaller lesion found in the cerebrum of this same patient.

The remarkable feature of this case was the presence of sporulating organisms, although, except in this particular por-

tion of the lesion where the sporulating forms were seen, the other organisms were all of the budding forms. The lymph node infection is also rather exceptional in the blastomycetic cases, but common in cases of coccidioidal granuloma.

3. Oswald. Reported by Eisendrath and Ormsby. *Archives of Internal Medicine*, August 15, 1908, p. 1 (Case 18). Patient had cough. Large cutaneous and subcutaneous lesion present. Several joints and a number of vertebræ were affected. Blastomycetes demonstrated in sputum and pus. Autopsy: Blastomycotic lesions general throughout the body. The bodies of several vertebræ destroyed also a portion of spinal cord.

4. Krost, Moes and Stober. *Journal A. M. A.*, 1908, vol. 50, p. 184. Polish laborer, age 42. Duration five months. Respiratory symptoms first noticed. Abscess in back developed after one month. First skin lesion appeared three months after onset. No symptoms of organic nervous lesions. Autopsy: Miliary and nodular blastomycosis of the lungs, kidneys, spleen, cerebrum, pleura and lymph nodes. Ulcerative blastomycosis of the cerebrum, cerebellum, prostate, pleura and skin. Five small abscesses in the cerebrum and two in the cerebellum. Multiple abscesses of the osseous, muscular, and subcutaneous tissues. Blastomycetes demonstrated in the cerebrum and cerebellum, as well as other tissues mentioned. Cultures were obtained from the lesions, also positive cultures from the blood.

5. In addition to the above cases, LeCount,¹⁴ in a recent paper, report a case with multiple lesions in the cerebrum and cerebellum occurring at the Cook County Hospital, a detailed report of which is expected to appear later.

It will be noted that in the two cases of coccidioidal granuloma abstracted

¹⁴E. R. LeCount. *Journal of Nervous and Mental Diseases*, vol. 36, No. 3. Blastomycotic Lesions of the Brain.

above there was in each case a well-defined basilar meningitis, while in none of the cases of systemic blastomycosis in which nervous lesions appeared, with the exception of the case of Curtis, in which no post-mortem examination was made, was such lesion present, but the diseased areas were located in the tissues of the cerebrum and cerebellum, and in one case a destructive lesion of the spinal cord is described.

It is very possible that if in all cases of systemic blastomycosis and coccidioidal disease a more careful post-mortem examination of the central nervous system were made, a larger number of lesions of the brain and cord might be found.

The case I now report should evidently be added to the list of brain lesions occurring in coccidioidal granuloma, making a total of three such cases reported, while there appear five cases of systemic blastomycosis showing such lesions. In the present case it is to be much regretted that the clinical history is entirely wanting, as I was unable to learn anything of the patient's history, the tissues studied having come into my possession simply as a laboratory specimen. It is therefore probable that no cultures were ever attempted in this case.*

The specimen is from the cerebellum and cerebrum, evidently at the base of the brain, and shows a marked thickening of the pia mater, which varies from a fraction of a mm. to four mm. in thickness. The disease process is seen to affect that portion of the pia mater extending into the sulci as well as that upon the surface.

Microscopically the thickened tissue is composed of a peculiar granulation tissue having a very decided resemblance to tuberculous granulation tissue. In our laboratory the histological diag-

nosis of the tissues was at first "tubercular meningitis" until the specific organism had been observed. Careful search for tubercle bacilli in the tissues was made without results. The most striking microscopic feature is the presence of great numbers of submiliary size nodules, as shown in drawing No. 1. These tubercles contain at their centers beautiful large giant cells of the Langhans type, practically every one of which contains one or more of the parasites, the oidium coccidioides. The giant cell is situated at the center of a group of cells corresponding to the so-called "epithelioid cells," described in the text-books in the typical tubercle, among which are scattered a few plasma cells and leucocytes. Surrounding the group of epithelioid cells is seen a thick layer of new-formed connective tissue. Around and between these tubercles are extensive areas of tissue filled with plasma cells and small, round-celled infiltration. The vascular channels are numerous, and many of the arterioles show a definite but not extensive degree of proliferative endarteritis shown by a marked thickening of the subendothelial connective tissue.

In certain of the tubercles just described the giant cell is disintegrated or is replaced by a small area of caseation. This is seen particularly in those where the contained organism has multiplied by sporulation and numbers of smaller organisms are seen within the necrotic area.

The miliary and submiliary abscesses described in most of the lesions of coccidioidal granuloma do not appear here to any great extent. The proportion of polymorphonuclear cells in the cellular infiltration is rather small. There are, however, a few of the typical minute abscesses described by other observers.

*Later it has been learned that this patient had lived at one time in California.

THE MORPHOLOGY OF THE ORGANISM IN THE
TISSUES.

The typical adult parasite within its giant cell is shown in the drawing No. 2. Practically none of these typical adult forms are seen except within the giant cells of the typical tubercle. They are of large size compared to the adult organisms of blastomycosis, some measuring as much as approximately 35 mikrons in diameter. They invariably appear perfectly spherical in shape, and their surface consists of a relatively thick capsule which is hyaline, clear, homogeneous, refractive, and not taking any stain by ordinary methods. The cytoplasm of most of them is deeply staining with hematoxylin and contains various sized spaces resembling vacuoles. Some of these large forms have at their surface a corona of radiating prickles or bristles, which are described by Rixford and Gilchrist⁴ and by Ophuls¹⁵ as appearing typically upon the surface of the sporulating form. Many of the sporulating forms as well as the large non-sporulating forms in our case have this appearance, as shown in drawing No. 3.

In some of the large forms and many of the smaller ones the deeply stained cytoplasm is absent, and the organism looks like an empty spherical capsule. Probably these are capable under favorable conditions of developing into the form taking the stain. Many of the spores and especially the smaller forms which have just emerged as spores from the parent organism have this appearance. However, many of the clear forms seem to have lost their vitality and have become wrinkled or collapsed, so as to have a semi-lunar outline.

SPORULATION.

In the sections from this case many forms and groups of the organism are seen which can leave no doubt that reproduction is by *sporulation*. In harmony with the description of sporulation by Rixford and Gilchrist the division of the cytoplasm evidently takes place by successive division into two, four, eight, sixteen or larger number of parts. Numerous forms and groups are seen which correspond to the sporulation forms described* by Rixford and Gilchrist and by Ophuls. In these the number of spores varies, but for the most part is very large, one hundred or more from a single parent organism. These sporulation forms are confined to the minute abscesses, in the center of which they are usually found. The capsule is thin and flexible, and in section is shown wrinkled or undulating. Notice figure No. 6. A large group of these recently liberated organisms is also shown in figure 7. Some of these groups are very large, evidently containing several hundred small organisms.

In our tissues, however, another phase of endogenous sporulation is also seen, and the instances are more numerous than of that type just described. In these forms the number of new-formed parasites within the parent capsule does not exceed twenty, and the "spores" are of relatively larger size than those described above. The capsule here is always thick and well defined, is apparently brittle, and is not capable of wrinkling, but when it bursts from the pressure of the developing spores within, separates into several fragments, which retain their original form. This is shown in figures 3 and 5.

As they are seen in the unruptured capsule, or in one just beginning to rupture, most of the spores are not exactly spherical, but are apparently under pressure and accommodate their shape to their surroundings. These new-formed organ-

¹⁵W. Ophuls, *Journal of Exp. Med.*, vol. 6, Nos. 4, 5 and 6. Further observations on a pathogenic mold formerly described as a protozoan. (*Coccidioides immitis*, *Coccidioides pyogenes*.)

isms for the most part appear not to contain a well-developed cytoplasm, but appear more like a thin capsule containing a fluid. This is shown in the recently liberated organisms contained within the giant cell in figure 4. However, some of them are distinctly granular and a few show the typical structure of the organisms as illustrated by the two fully formed organisms within the fragments of the parent capsule in figure 5.

It is to be noted that this form of sporulation is seen only in the typical giant cells and tubercles and never within the minute abscesses, while the sporulation forms previously described are always surrounded by a minute abscess.

There is an invariable yellowish brown pigment seen within the organisms which are sporulating with the rigid capsule just described.

No budding forms can be seen in any of our sections, reproduction taking place evidently only by sporulation methods.

HYALINE BODIES IN GRANULATION TISSUE.

One interesting histological feature of the tissues in these lesions deserves special attention. Scattered throughout the granulation tissue are seen great numbers of peculiar various sized, perfectly spherical bodies. Unstained, they appear as clear, glassy, highly refractive bodies. Their affinity for stains seems to vary, the larger forms usually taking the different stains more deeply than the smaller. All, especially the larger ones, have a marked affinity for the fuchsin stain and retain a deep red color after decolorizing the sections with acids, thus resembling the acid fast bacilli. Some retain Gram's stain, while others do not. With the ordinary hæmatoxylin and eosin stain they show a marked affinity for the red color. With polychrome methylin blue and certain other methylin blue preparations the larger forms take a decided blue stain.

Their size varies from minute forms up to fifteen or sixteen mikrons in diameter.

These hyaline bodies are contained within the cytoplasm of certain plasma cells for the most part, especially the smaller ones, which are seen in groups of twenty-five or thirty, distending the cell wall and distorting the nucleus of the plasma cell in which they are present. (Figure 8.) Where the larger ones are seen, a much smaller number are present within a single cell, one cell containing one or more larger spheres. Many of the larger ones are free in the tissue spaces. These bodies are seen in greatest numbers in the areas of plasma and small round cells, and especially numerous in the perivascular lymph spaces. The hyaline bodies are not present in the tubercles and giant cells.

Somewhat similar bodies are described by Ricketts¹² in his monograph on blastomycetic dermatitis. Apparently he does not describe forms as large as those seen in this case. I have taken much interest in studying these, and it has occurred to me that they might possibly be related in some way to the organisms causing the lesion, instead of being, as Ricketts considers them, a hyaline degeneration of the cell protoplasm. However, I have come to no definite conclusion upon this point. In sections from one of Dr. Litterer's cases of blastomycetic dermatitis which I have had opportunity to see, the tissues contained great numbers of these hyaline bodies, and this case was very unusual in the fact that although a well-defined case of typical blastomycetic dermatitis, it was exceedingly difficult to demonstrate the presence of the characteristic organisms of blastomycosis, thus leading to the suspicion that the hyaline bodies might be an unusual form of the parasite. Ricketts has described a somewhat similar occurrence in one of his cases (Case 1).¹² I have

also observed in a series of cases of chronic inflammatory tumors of the gums the invariable presence of these same hyaline bodies. It has seemed to me a possibility that their presence in such tumors might have some etiological importance. Other investigators have described apparently identical structures in the tissues of chronic inflammatory lesions and the general tendency is to regard them as originating from cytoplasmic degeneration or infiltration and not as parasitic organisms.

CONCLUSIONS.

1. The organism in the case here reported evidently belongs to the class of sporulating fungi called *oidium coccidioides*.

2. Although the lesions histologically resemble tuberculosis, the tubercle bacilli are not found.

3. In the few cases of central nervous system involvement reported, the coccidioidal disease apparently has a predilection for the meninges (pia mater); while the majority of these lesions in systemic blastomycosis have been in deeper tissues of the brain.

It seems probable from the large number of cases of this apparently unusual disease discovered in the localities where certain investigators have been especially on the lookout for them that if our attention were more frequently called to their possible occurrence they would be found to be more prevalent in other localities.

CANCER OF THE STOMACH, INCLUDING STATISTICS OF THE SITES AND FREQUENCY OF CANCER IN THE ENTIRE DIGESTIVE TRACT.

CHARLES P. M'NABB, M.D., KNOXVILLE.

DEFINITION.

Carcinoma is a chronic infective disease caused by an unknown micro parasite which invades epithelial tissues and by proliferation produces malignant neoplasms.

CAUSES.

Age.—Osler and McCrae found ten cases reported in the literature under 10 years of age, and thirteen cases between 10 and 20 years of age, and the statistics of various authorities put the frequency of cancer under 30 years of age at from 1 to 2 per cent. The disease becomes rapidly more frequent after the 30th year, up to 40 or 45, then maintains about a level until 65

or 70, and then declines into extreme old age.

Heredity.—Was long believed to be a potent factor in the production of cancer, and it is well established that a liability to cancer as well as other diseases may be transmitted from parent to offspring and thus from generation to generation. However, it is not within the realm of probability that the virus of the disease could be transmitted from parent to child twenty or thirty years before its development in the parent and then lie dormant in the child until it had passed middle life before becoming active; and, as the statistics which are cited to prove heredity include not only parents but grandparents and uncles and aunts, in many instances the parents themselves

having skipped the disease, such theory becomes ridiculous.

Trauma.—Has also been advanced as the cause of gastric cancer, and by trauma is meant injuries from without and injuries from within, as from the swallowing of very hot liquids or foods or hard insoluble and rough substances, which would produce abrasions in their passage through the stomach. This theory will not stand the test of careful dissection, because it could, at best, be no more than a predisposing cause, though such injuries furnish a port of entry for the specific cause should it pass that way.

Previous Diseases of the Stomach.—Are at least only operative in relatively small proportion of cases of gastric cancer. That it sometimes develops from chronic ulcers or the scars of healed ulceration and from polyadenomata, has been proven, but only in a small per cent of cases. From 80 to 90 per cent of gastric cancers arise in the midst of apparently perfect healthfulness of the digestive organs.

Diet.—Efforts have been made to connect certain foods with the production of cancer, but no proof has been adduced in support of such theory. And it is well worth mentioning that in the statistics of the Royal Victoria Hospital of Montreal 56 per cent of cases of gastric cancer were alcohol habitues. But this could not have been the specific cause of the disease, only predisposing through its local effect on the gastric mucosa and its lowering effect on the vital forces, thus rendering them less resistant to the invasion of any disease that might attack.

Infection.—The theory of a specific infective agent in cancer has not been proven, and it is, therefore, not accepted as true by most authorities. But let us consider briefly a few things in the incidence of cancer in the digestive tract and compare the things we know with the

things we do not know in this disease and see if the tenons of the unknown quantity do not fit snugly into the mortises of the things that are well known in relation to cancer of the digestive system.

Reiches Hamburg statistics, as quoted in Osler's *Modern Medicine*, shows that 50.2 per cent of all cancers are gastric, and that 74.5 per cent of all cancers are of the intestinal canal; and, if we include cancers of the liver and pancreas, which are almost always secondary to cancer of the stomach or bowels, the statistics show that 85.5 per cent of all cancers occur in the digestive tract from the mouth to the anus, including the liver and pancreas.

Orth's statistics show that 80 per cent of stomach cancers are situated at the pylorus and lesser curvature; 10 per cent at the cardia, and 10 per cent are diffuse.

The combined statistics of Maydl, Nothnagel, Zemmann, Muller and Bryant show that approximately 6.2 per cent of *intestinal* cancers are in the small intestines; 6.8 per cent in the ceecum and appendix; 22.8 per cent in the various portions of the colon, and 64.2 per cent in the sigmoid and rectum.

Now, when we add the percentage of cancers of the mouth, throat and esophagus to the foregoing, we can appreciate the fact that cancer develops along the digestive canal at the points of maximum contact of foods and food residue and from this fact we may draw a reasonable inference that the cause of cancer, whatever it may be, enters with food and drink and attacks the points where it lies the longest and is brought into most intimate contact with the mucous membrane, and these situations also happen to be at the points most liable to be injured by slight traumatism caused by irritants passing through the canal.

Authorities have long believed in the auto-inoculation possibilities of cancer—

i. e., the swallowing of particles of cancerous growth from the tongue or mouth, or the passing of such particles from cancer of stomach to the bowels, may inoculate structures further down the canal, and that by metastasis cancerous particles may be carried through the blood to distant parts or organs, and there produce neoplasms. But it is far more reasonable that the germ, whatever it may be, is carried through the lymph streams to the general circulation, thence by the blood to any point of lessened resistance where lodgment and growth may take place. I myself witnessed here in the city of Knoxville, a case of an apparent direct infection from husband to wife. In 1882 J. M. L., aged 56 years, died of epithelioma of the face, beginning on the lip some years before. In 1887, his widow, Mary P. L., died at the age of 54 from epithelioma of the face, beginning on the nose some time before her husband's death.

Cancer of the stomach begins in the epithelium of the secreting cells, from which start an epithelial overgrowth, the final result of which is a malignant tumor at the primary site that is not limited in its growth to the structures of the organ first involved, but may extend by continuity and contiguity to neighboring structures, and through the lymph streams and blood vessels to distant parts and organs. Only a very small per cent of gastric cancers are secondary, the disease beginning nearly always as a primary disease of the stomach itself.

We have seen that a very large majority of these cancers are situated on the pyloric end and lesser curvature, and it was formerly believed that such cancers were usually of pyloric origin, but Boas saw in a series of 125 gastric cancers 27 per cent primarily pyloric and 26 per cent primarily of the lesser curvature. Tabora found 39 per cent beginning in the lesser

curvature, and their findings have been corroborated by many other trustworthy authorities. This fact is of great clinical importance, as such lesser curvature neoplasms postpone definite physical signs until the lymphatics have carried the infecting agent to the general circulation, inoculating the mediastinal and probably the left supra-clavicular glands on the way. Since the cancer cause, whatever it may be, seems to especially prefer the pylorus and lesser curvature for its field of destruction and ravage, nature has been kindly considerate of the surgeons' opportunity by making that area the most accessible of any part of the stomach for successful operation. But she has been cruel to the victim in the anatomical distribution of lymphatics of the part, and pitilessly exacting of the diagnostician, as he often has to make a diagnosis from the subjective symptoms and laboratory analysis without the valuable assistance of the ordinary physical signs. The collecting lymph trunks from the pylorus and the lesser curvature, and about two-thirds of the anterior and posterior walls of the stomach—*i. e.*, from a line drawn from a little to the left of the cardia to the pylorus, about parallel with and one-third nearer the greater curvature approaching the middle when near the pylorus, empty into the coronary chain of glands, six or eight in number, which lie along the lesser curvature from the pylorus to the point of entrance of the coronary artery; the lymph streams flowing from right to left, while collecting lymphatics of this group, lying to the left of the coronary artery and around the cardia, carry their lymph downward, and to the right, meeting and joining the pyloric streams and leaving the stomach in company with the coronary veins. This group of glands is called the coronary, or the principal current.

The second group of lymphatics collect from the anterior and posterior surface

of the stomach and greater curvature for about half the distance from the pylorus to fundus, and about one-third the width of the organ, and their course is downward and to the right in the gastro-epiploic omentum, emptying into the subpyloric glands. There are five or six lymph glands connecting these lymphatics, and lying near the right gastro-epiploic artery and vein, and not infrequently they lie between the artery and the colon, and may escape removal in operations for cancer. This is called the right epiploic current and group of glands.

The third group drain the fundus and the left inferior third of the anterior and posterior surfaces, and greater curvature and passing through the gastro splenic omentum empty into the glands of the splenicopancreatic omentum, situated near the hilum of the spleen. This group of glands is called the splenic current, and the territory of the splenic current is called the nentral area, because of its freedom from cancerous disease.

The neoplasm itself may be circumscribed or diffuse and of scirrhus or medullary type, and mixed types are not uncommon. Scirrhus cancers are the most common and are usually found near or involving the pylorus and lesser curvature. They are slow growing and invade the muscular coat early. There is an abundant fibrous stroma with cellular infiltration which thickens, stiffens and hardens the structures involved. This type soon shows motor insufficiency of the stomach by crippling the muscularis of the area assaulted, and thus preventing rythmical peristalsis, if, indeed, there is not produced a toxine which restrains muscular action and also retards secretory function. It also, sooner or later, grasps the pyloric ring in its destroying fingers and produces stenosis, followed by gastrectasia. The medullary, or soft cancers, produce fungating tumors, which

project into the interior of the stomach. They are soft, vascular and juicy, and early break down and ulcerate. They are of more rapid growth and spread with greater rapidity; are very cellular in character, and are deficient in stroma. Both types of cancer may undergo colloid degeneration, in which event diffuse thickening of the gastric wall occurs from infiltration by the jelly-like fluid. In all types of malignant disease of the stomach there is an area of greater or less extent of gastric mucosa outside of the lines of malignant infiltration which undergo inflammatory or degenerative changes of the secreting cells of the stomach, which greatly interfere with the functions of digestion in the remaining or non-cancerous part of the organ. A curious fact is noted by many observers that, after the extirpation of the malignant area, the accompanying secondary disease of the gastric mucous membrane recovers and the secreting cells are said to be reproduced and functional activity is re-established.

Symptoms.—Cancer of the cardia is clinically and histologically identical with œsophageal cancer, with which it is usually associated, and it is therefore not considered in this paper. There are also a small per cent of stomach cancers which start in existing ulcers, or in the scars of former ulcers, in which the diagnostic criteria of ulcer pass by rather rapid gradations to that of cancer, and for a brief and variable time differentiation is impossible; but with these exceptions there runs in and out through warp and woof of every case of cancer of the stomach a silver cord of several strands that, if followed patiently and perseveringly for a few days or a few weeks, leads to a correct understanding of the situation. In from 75 to 90 per cent of cases, cancer begins almost suddenly in persons

past middle life, whose digestion had previously been excellent. They complain of.

1. Uneasiness and fullness in the stomach.

2. Loss of appetite, which will not improve, and in which an aversion to meats soon appears.

3. Emaciation and physical weakness is persistent and progressive.

4. Pain, the increment of the beginning uneasiness and fullness, becomes noticeable and ceaseless. It is located in the epigastrium, and sometimes in the back near the spinal articulations of the left ninth and tenth thoracic vertebra.

5. Vomitings which follow immediately the ingestion of food, or may come several hours or days, after eating, depending on the location of the neoplasm and whether dilatation and stasis have occurred. Microscopically, there are but two features of the vomitus that particularly impress the writer, to wit: large quantities thrown up at infrequent intervals, denoting stasis and dilatation from pyloric obstruction, and "coffee grounds" vomitus, denoting ulceration, and if it appears early, the fungating bloody type of growth.

6. A decided secondary anemia which may simulate the pernicious type so closely as to overshadow the gastric symptoms and thus be misleading for a time.

7. Except in the "ulcer cases" gastric analysis shows early motor deficiency and marked reduction in free hydrochloric acid and lactic ferments, and the presence of lactic acid in the contents of a stomach that had been washed out clean before the test meal was eaten, almost certainly confirms the diagnosis of cancer. B. Moore found two-thirds of cancerous cases in other organs and parts of the body to be associated with great reduction or absence of HCL in the stomach contents.

I have tried to twist the foregoing facts into "a silver cord," or guiding line, which

has been useful to me in clinical work on many occasions, when such signs as tumor, marked dilatation, visible peristalsis, occult bleeding, secondary nodules, etc., had not appeared. Cancer of the stomach is either increasing in frequency, or more thorough diagnostic methods reveal its presence much oftener than formerly, and if I can offer any excuse for writing this paper, it is the plea for carefulness and thoroughness in examining all stomach cases in persons passed middle life, to the end that cancer, when present, may be uncovered early enough that the far-reaching arm and skillful hand of modern surgery may rescue its victims.

In the foregoing remarks I have endeavored to describe what I will term the "ante-tumor stage" of gastric cancers, in which physical signs, exclusive of analysis of gastric contents, are not prominent, if indeed they are not entirely absent.

Inspection shows emaciation and pallor, and if the disease extends secondarily to the liver or bile passages, there will be intense and persistent jaundice and ascites from portal vein obstruction. After the tumor has grown large enough, there is fullness either in the epigastrium, with a wide area of aortic pulsation, or in the right sub-costal furrow. Gastric tumors are not, as a rule, freely movable, the short attachment of the duodenum limits the excursion of pyloric growth unless gastro-ptosis is present, in which event a tumor of the pylorus, or lesser curve, may be displaced to almost any part of the abdomen. When such growths are adherent to the liver they have respiratory movements, and Boas puts much faith in "expiratory fixation" of epigastric tumors as a sign of lesser curvature cancer, to wit: When the patient, by taking a deep breath, forces the tumor from under the left lobe of the liver until it is palpable in the epigastrium, when it is caught by the fingers pressing firmly above it, and held so that

it cannot return to its hiding place with expiration until released from the restraining fingers. Secondary nodules about the umbilicus or left supra-clavicular fossa, or the inguinal lymph glands, occasionally appear, as late signs of abdominal cancer. After pyloric obstruction occurs, visible peristaltic waves may be seen passing from left to right across the epigastrium. The tongue is usually heavily coated, and when gastric stasis occurs, or the neoplasm ulcerates, the breath is very offensive, of which the patient is ignorant. It might be worth mentioning in this connection that a person with a very foul breath caused from an unclean mouth, carious teeth or diseased tonsils, or nose, is usually aware of its presence, but ignorant of it, if it is caused by putrefaction in the stomach, or its contents. However, this is not necessarily a sign of cancer.

Palpation sooner or later detects a tumor and indicates its size, shape, location, mobility and consistence, and whether it is smooth or nodular, and by emptying and distending the stomach with air or gas, its relation to that organ can be ascertained with a fair degree of probability. Auscultation is of no value in stomach diagnosis, and the same is said of percussion by most authors on gastro enterology, but the writer of this paper firmly believes that after filling the stomach with air, he can very accurately map out its lines by stethoscopic percussion, and therefore regards it as one of the most valuable aids in determining the size and position of the stomach.

There are many other points not mentioned in this paper, which, for lack of time, I leave to those, if any, who may discuss it, but will briefly refer to a few symptoms in this connection, because some of them do not appear until after pyloric obstruction and stasis have occurred, and all of them belong to the last

stage of the disease. Fever is present in a large per cent of cases, and is doubtless caused by toxic absorption from the ulcerating mass. Albuminurea is not infrequently present, and it is also of toxic origin. Indican is found in the urine in large amounts, in cancer of the alimentary canal, and indicates albuminous putrefaction in the digestive tract. Acetone and diacetic acid is also frequently found in the urine in advanced cases of pyloric cancer.

After obstruction and dilatation have advanced far enough to close the pylorus, water not being absorbed by the stomach, patients suffer from thirst, and if water is not abundantly supplied per rectum, painful cramps of the muscles of the extremities may harass the sufferer. I have seen this statement fully verified in my own cases.

The differential diagnosis between

| ULCER OF STOMACH | AND | CANCER. |
|---|-----|--|
| Age: 15 to 30 years. | | 40 to 70 years. |
| Sex: Most frequently in young women. | | More frequently in men. |
| Appetite: Good. | | Appetite: Poor. |
| Severe pain when food is taken which is relieved by vomiting. | | Pain continues, but not so severe and not much influenced by taking food, nor relieved by vomiting. |
| Circumscribed area of great tenderness | | Tenderness diffuse and not very acute. |
| Vomiting soon after eating and in 30 to 50 per cent of cases, bright red blood is thrown up, and may be in such quantities that the patient is collapsed. | | Vomiting at long intervals and in large quantities. Often contains "coffee grounds" vomitus, and food eaten many hours or days before. |
| Patient improves under proper medical and dietetic treatment. | | Little improvement under any sort of medical and dietetic treatment. |
| Free HCL in excess of normal. | | Free HCL diminished or absent. |
| Lactic acid never present. | | Lactic acid present in 80 to 90 per cent of cases. |

Chronic gastric catarrh has many symptoms in common with the early stage of cancer, but there is not the constant decline in general health, and proper treatment soon improves the local as well as the general condition of the patient. There is neither red blood nor "coffee grounds" vomited, and there is a large amount of mucons in the vomited material. Free HCL and the lac-ferments are below par and motility is impaired. Lactic and other fermentative acids are occasionally present, but not in a test breakfast, if the stomach was properly washed beforehand. Tumors and dilatation are absent. Nutrition remains fairly good, sometimes excellent. The gastric neuroses can be differentiated without difficulty. The general appearance and manner of exaggerating symptoms by such patients stamp them as neurasthenics, and the "ear-marks" of malignancy, to wit: progressive weakness and emaciation are not present.

Prognosis is bad, death usually occurring in from three to fifteen months, but many brilliant results of operative surgery have made a rift in the clouds of gloom, through which shines an increasing ray of hope, although it is too early yet to estimate the exact results of such treatment.

In the treatment of cancer of the stomach, I am a firm believer in, and a strenuous advocate of, complete extirpation of entire diseased area, when and where it is possible to do, as that offers the only hope of saving life. The medical treatment of cancer of the stomach is a failure in so far as a successful issue is concerned, but more than that, it is a sorry chapter in the record of internal medicine, for, alas, too often the diagnosis is equal to the decree: "Make him comfortable and let him die." Would such decree satisfy you if the sufferer were your wife or father, mother, brother or sister? No, indeed; rather let us say:

"Make him comfortable and keep him alive as long as possible." With this motto before us, the principles of therapeutics, which have guided the profession of medicine through the boisterous seas of past ignorance and persecution, and crowned its brow with the honors and glory of splendid achievement, stand out in bold relief before us.

1. The stomach must be cleansed daily by careful and thorough lavage.

2. Until stenosis becomes complete, every calorie of food should be given that can be absorbed or passed to the duodenum by the stomach, and, so far as possible, all foods should be artificially peptonized; the caloric value of every gram taken should be estimated, and not less than two thousand calories given daily, and when the washed-out residue shows that much less than that amount of nutrition is being disposed of, the aid of the colon must be invoked. However, in pyloric cases the hour will arrive when ectasia practically puts the stomach out of business, and death is hovering at the door; but with a resourceful physician in charge, the battle rages weeks longer before he wins the inevitable victory. The stomach must have its daily cleansing and be petted and coaxed with a little peptone and albumoses, but the colon must become the digestive receiving organ. It also should be very thoroughly flushed out daily through a stomach tube, No. 1 or No. 2, and from three to four nutritive enemata given in each twenty-four hours. The larger intestine is capable of absorbing well the following food elements, provided the enemas are given slowly and without too much force, and not too frequently, and that sodium chloride be added to each enema.

1. Peptones.

2. Milk.

3. Raw eggs, provided *only* that 1 c.c. *sod. chl.* be given with each egg.

4. Raw beef juice.

5. Alcohol.

6. Raw starch in solution.

7. Grape sugar, but it must be given in not over 10 to 20 per cent sol., and even then it is quite an irritant to the mucous membrane.

Unfortunately oils, the richest food substance in caloric value, is not absorbed by the large intestine.

Although this paper is already too long, I want to emphasize the following few points in conclusion:

1. In rectal feeding, we should arrange our enemata to get the greatest number of calories from the smallest number of c.c. of enemata.

2. The colon will not tolerate rough usage, and more than 300 c.c. should never be thrown in with one enema.

3. It takes not more than four to seven days for acetoneemia to develop, if less than fifty grams of carbohydrates are taken into the system daily; therefore 50 to 75 grams of starch and 15 to 30 grams of grape sugar dissolved in 300 c.c. water, or peptonized milk, must be given each twenty-four hours.

4. The patient with pyloric stenosis suffers much from thirst, and not less than 1500 c.c. of water in some form should be injected every day.

5. That the addition of common salt makes all kinds of enemata much more absorbable by the large intestines.

BIBLIOGRAPHY.

- Cunningham's Text-book of Anatomy.
Poirier-Cunéo's Anatomy of the Lymphatics.
Kirke's Hand-book of Physiology.
Stengel's Pathology.
Martin's General Pathology.
J. Bland Sutton on Tumors.
Reigel's Diseases of the Stomach.
Riegel's Diseases of the Intestines.
Boas' Diseases of the Stomach.
Boas' Diseases of the Intestines.
Martin-Osler's Modern Medicine.
Einhorn's Diseases of the Stomach.

Leube's Medical Diagnosis.

Musser's Medical Diagnosis.

Green's Medical Diagnosis.

Sahli's Diagnostic Methods.

Cabot's Physical Diagnosis.

Harvard Outlines of Medical Diagnosis.

Hutchinson's Food and Dietetics.

B. Moore, London Lancet, 1905, p. 1121.

Bryant & Buck's American Practice of Surgery, vol. I.

Moynilhan's Abdominal Operations.

Binnie's Operative Surgery?

DISCUSSION ON THE PAPER OF DR. McNABB.

DR. WILLIAM D. HAGGARD, of Nashville:

Mr. President: This is a most important paper. The essayist has called our attention to the fact that one-third of all cases of cancer in the human body occur in the stomach. It is a fatal disease, and the only exception I could take to any part of the paper is the difference between his statistics of cancer as caused by ulcer and those that have been generally conceded. I think in the interesting paper read this morning where the author quoted from Rodman as saying that from fifty to ninety per cent of the cases of cancer of the stomach develop upon or are the result of ulcer is probably true. I do know that Graham has found a chronic ulcer history in sixty per cent of his cases of cancer of the stomach. He is one of the best observers in this country. The cases were operated on by Mayo, the diagnosis was confirmed by microscopic examination. I think the main lesson in cancer of the stomach is to be suspicious of chronic digestive disturbances in elderly people, that come after a long period of dyspepsia, get worse, attended with pain, with anemia, with discomfort, as well as the pallor which attends these cases. Another form comes suddenly out of a clear sky. We must not wait for cachexia; but if we find the early absence of hydrochloric acid on this basis I think we are warranted in advising an exploratory laparotomy. That is the only way we can absolutely diagnose carcinoma of the stomach. Personally, if I were in that condition, I would much prefer to take my chances with a buttonhole incision and a few minutes' exploration with a linen closure, and if the cancer was inoperable, the risk taken would have been small, the satisfaction great. On the other hand, if it were operable, opportunity would be afforded for complete extirpation. I think Deaver is correct when he says that if a patient, in whom we suspect carcinoma of the stomach, does not improve under a few weeks'

observation and medical treatment, we should give him the benefit of an exploration. Cancer of the stomach is as amenable to surgical intervention as most any organ in the body, and where this operation is done by an expert, the mortality has been reduced to about four per cent. Many of these patients live as long as a year and a half without getting a recurrence, but they live only a few months if you let them alone. Some of the more notable cures have extended over sixteen years, and a larger proportion of them lived longer than they otherwise would have lived. We do not treat cancer of any other organ in the body medically, and why should we treat cancer of the stomach except in a surgical way? The mortality is 100 per cent without operation. Elderly people, elderly men, with chronic digestive disturbances, who fail to improve under medicinal management, should have the benefit of exploration, and if cancer is found a gastrectomy will give the best chance for their salvation.

DR. W. A. BRYAN, of Nashville:

The cause of cancer of the stomach is not known, but it looks very much like an infection. I make that statement after what has been said by the essayist with a view to making another statement a little later on. We ordinarily get the idea that the glandular involvement with cancer, what is spoken of as metastases, occurring in cancer, whether it be of the stomach or any other organ, is a matter of carrying the cancer cells or infection from the point of original growth into the glands and there developing. It has been demonstrated in other regions, not alone in cancer of the stomach, that while this may be the case partially, it does not represent the whole truth, for the reason we know that the cancer tissue grows into the gland, and in that gland develops. These little rootlets of cancer have been found running through the lymphatics in various directions. I make that statement because clinically it has very little to do with the case. Surgically, it has a great deal to do with the case, for the reason that if we remove the cancer and go over to the glandular region and take the glands out, we leave the intervening portion of infected tissue, and we have not done the thing we have wanted to do, namely, to get rid of the disease. When working on cancer we must get around the whole thing, get all the glandular area, get all the infected, nodular and indurated tissue, and get as far beyond as we can to a safe line. We should strive to take the involved tissue out *en masse*. That is the way we do in cases of cancer of the

breast and of the uterus, and why should we not do the same thing in cancer of the stomach? For a long time we have known that cancer of the stomach produces absence of hydrochloric acid, and we have thought that this was a sign of cancer of the stomach, but it has been demonstrated that cancer produces absence of hydrochloric acid whether it be in the stomach or outside of the stomach. That is not a peculiarity of cancer *per se* of the stomach. Therefore, in cases of obscure cancer, whether it be of the stomach or elsewhere, this evidence of the reduction or absence of hydrochloric acid becomes an important diagnostic point, if we will investigate and determine whether it is absent or not.

DR. JOHN A. GAINES, of Nashville:

I rise to call attention to a few things in regard to the question of infection with cancer. Personally, I believe positively that cancer will be shown at some time to be an infective process. It behaves so much like infective processes that I am ready to accept that position. As proof of that fact, I will cite briefly my personal experience in one instance. I had a case referred to me from New Orleans with cancer of the cervix in a twenty-six-year-old young lady. There was no cancer in the history of the family. During a period of seven years the father of this girl developed cancer of the lip; a brother developed cancer near the ear; one sister died of cancer of the uterus unoperated. An uncle living near by or in the house considerably, developed cancer at some point about the face. I did not see those cases; I only have a history of them.

As to the question of more direct experiments or observations, for some time it has been known that rats develop cancer, typical in every particular. It is found in the rat without inoculation. It can be transmitted by inoculation from one rat to another. During the last year a certain observer in New York in making researches there went over to the Cancer Hospital of New York State to prosecute some experiments of cancer in rats, carrying with him some large cages and some small cages in which the rats were confined. After going through a number of interesting experiments, he left his empty cages at the hospital. The smaller ones were sterilized, the larger ones washed, and put in the basement. Six months afterward the cages were brought out for rats for a different series of experiments of non-infected rats. The larger cages were used that had not been sterilized with hot steam, and promptly the rats confined in the larger cages developed cancer in more than one instance. It was not a question of

accident. It has been well-established in London, where observations have been carefully made, that there are certain houses that are termed cancer houses, in which families living in these houses for ages and changing from time to time there has been at frequent periods the development of cancer in the inmates of those houses, not by personal heredity, and too frequently have been considered as pure accidents. We know that cancer is on the increase in the East; that there has been more than twenty-five per cent increase in cancer in the last eight or ten years, in part due to our better diagnostic technic and early recognition of the disease, but beyond question it is rapidly increasing.

One other point I wish to emphasize is the fact that frequently, when a surgeon gets up before a body of this kind, and speaks of surgical conditions, the medical practitioner looks at the matter with a biased idea of surgical enthusiasm. We are enthusiastic because there are conditions in which we can do good, but frequently these patients are not always presented to us in time to accomplish good results, and we are enthusiastic because we want to imbue everybody with the same enthusiasm, particularly general practitioners, in order to induce them to bring their patients to us early, in order that good results may be obtained by early operations. I would urge that every practitioner, wherever he may be located, carry out the suggestion of Dr. Haggard and not keep these cases under observation until they have tumors that are beyond relief.

DR. WILLIAM LITTERER, of Nashville:

The man who made the experiments referred to by Dr. Gaines is Dr. Gaylord, an assistant of Roswell Park. Quite a number of others were associated with him in doing this work. Beebe, of New York, also experimented with mice. Experiments have likewise been carried on in

regard to cancer by Jansen and Paul Ehrlich, of Frankfort-on-the-Main, who succeeded in inoculating animals.

I cannot go into a full discussion of the etiology of cancer; therefore, I will confine my remarks very largely to the laboratory diagnosis. Examination of the stomach contents is not an ideal method, although it should not be overlooked. We may have the absence of hydrochloric acid. We may have a little lactic acid, and yet it may not be cancer, although it is a good symptom, and I think we ought to make our examinations and it should be weighed as a symptom, and not as a diagnostic or pathognomonic sign.

One of the latest diagnoses is the serum diagnosis of cancer. It is similar to the serum diagnosis of syphilis, which you all know is one of the greatest discoveries that has been made in the last ten years in the way of diagnosis. The serum diagnosis of syphilis is practically on a sound footing. In a patient who has ever had syphilis we can make a diagnosis of that condition. Reasoning and working on the same principle as deviation of the complement, the serum diagnosis of cancer is worked out on that line. It has not been established like the syphilitic reaction, but investigators are working on the same line, I have not time to go into a technical explanation of the Ehrlich side-chain theory as to the deviation of the complement, but it is really on that line, and much good will come from that condition. I have only seen contributions of that nature. Other contributions have been made by Crile on hemolysis in cancer, the results of his work being very reliable, but deviation of the complement is certainly not to be overlooked. It has got to be worked out and it may not prove as reliable as the diagnosis of syphilis. But I simply add this with the hope that we may be more exact in our methods of diagnosis, and if this should be true, it will be one of the greatest things we have ever had.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

"NO TUBERCULOSIS IN TENNESSEE IN 1915."

THIS is the motto of The Tennessee Federation of Women's Clubs, acting through the Civic and Health Departments.

Can this be accomplished? They say it can, and when the women of Tennessee behind this movement have said, then it must be accomplished.

How can it be done?

By teaching the people; by showing them that tuberculousis is communicable, preventable and curable, for when the people are aroused and see and know what is, and what can be, then they will act, and that speedily.

The steps necessary for enlightening the people have been taken, and it now remains for the physicians to get behind this movement and give it their most hearty support and endorsement.

What are these steps?

They have caused to be exhibited, and are still exhibiting at the various county fairs, the means, methods, appliances, etc., relating to every phase of this all-absorbing question. They now call upon the physicians to help them in this great undertaking, and each and every one

should do all in his power to further this cause. These exhibitions began with the fairs held in August, and have proven most interesting and helpful.

In order that you may be ready to help, we herewith give the programme, as they have planned it, for the fairs yet to come:

Circuit No. 1—September 14-18, Columbia (Maury), Miss Mary Carpenter; September 20-25, State Fair (Davidson), Mrs. Crockett, Mrs. Cooke; September 28-October 1, Union City (Obion), Mrs. W. H. Swiggart; October 6-9, Paris (Henry), Mrs. W. W. Farabough; October 12-16, Jackson (Madison), Mrs. W. P. Dabney; October 20-23, Dresden (Weakley).

Circuit No. 2—September 15-17, Coal Creek (Anderson); September 22-24, Morristown (Hamblen), Miss Sara Carriger; September 28-October 1, Newport (Cocke), Mrs. W. B. Robinson.

Circuit No. 3—September 16-18, Cookeville (Putnam), Dr. Dora Wilder; September 22-25, Humboldt (Gibson), Mrs. A. R. Dobson; September 28-October 1, Memphis (Shelby), Dr. Elizabeth C. Kane; October 5-9, Dyersburg (Dyer), Mrs. J. E. Harton; October 12-16, Trenton (Gibson), Mrs. E. M. Hicks; October 12-16, Huntingdon (Carroll), Mrs. W. E. Townes.

If the opportunity thus offered is taken advantage of, the seed sown will produce most abundantly, the harvest will be most bountiful, and we shall continue to garner its fruits for many seasons.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., OCTOBER, 1909

No. 6

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee..... Shelbyville.

C. H. DAVIS, M.D., East Tennessee..... Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL

For the Three-Year Term.

W. C. BILBRO, M.D.... Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan
GEO. H. PRICE, M.D..... Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D..... Nashville.
Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D.... Covington.
Alternate, J. D. BREWER, M.D..... Newbern

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL:

A. B. COOKE, M.D., Nashville.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman*..... Memphis.
W. F. CLARY, M.D. Memphis.
E. C. ELLETT, M.D. Memphis.
W. H. BALDWIN, M.D. Memphis.
J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.
S. R. MILLER, M.D. Knoxville.
BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.
W. H. WITT, M.D. Nashville.
HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

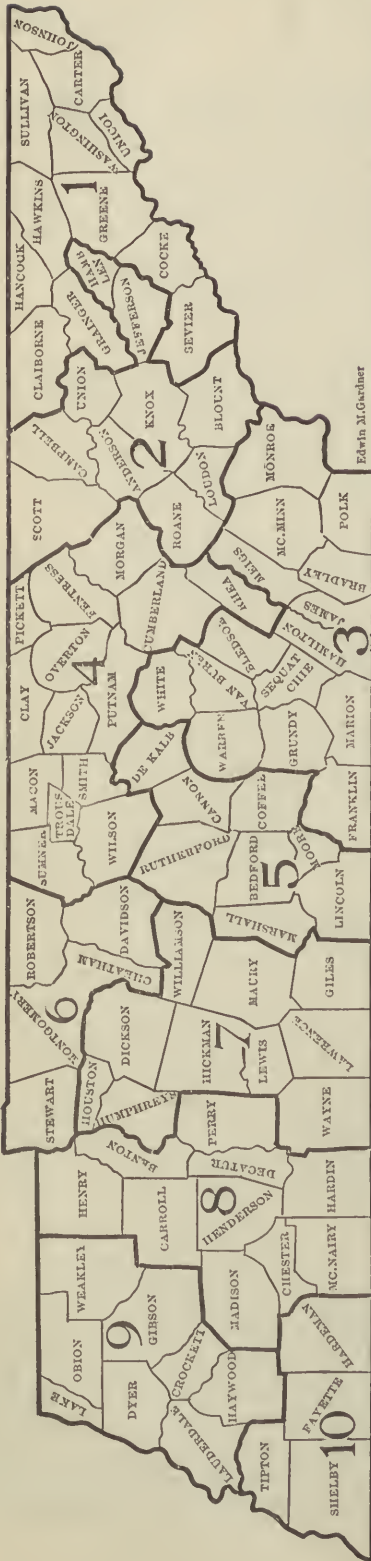
S. S. CROCKETT, M.D., *Chairman* Nashville.
W. D. HAGGARD, M.D. Nashville.
PAUL F. EVE, M.D. Nashville.
GEO. H. PRICE, M.D., *ex-officio* Nashville.
JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.
W. G. FRIERSON, M.D. Shelbyville.
J. B. WITHERINGTON, M.D. Munford.
B. D. CALDWELL, M.D. Milan.
H. H. McCAMPBELL, M.D. Knoxville.
F. J. RUNYON, M.D. Clarksville.
R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLED SOE COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D. Maury City.
 Secretary, S. E. McDONALD, M.D. Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D. Nashville.
 Secretary, H. M. TIGERT, M.D. Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D. Smithville.
 Secretary, W. B. PARKER, M.D. Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D. Dickson.
 Secretary, W. S. SCOTT, M.D. Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D. Dyersburg.
 Secretary, E. L. RAWLES, M.D. Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D. Galloway.
 Secretary, COMPTON N. CROOK, M.D. Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D. Humboldt.
 Secretary, W. C. MCGEE Trenton.

GILES COUNTY.

President, W. E. WILSON, M.D. Pulaski.
 Secretary, JAS. K. BLACKBURN, M.D. Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D. Mosheim.
 Secretary, S. W. WOODYARD, M.D. Greeneville.

HAMBLEN COUNTY.

President, W. E. HOWELL, M.D. Morristown.
 Secretary, T. L. SMITH, M.D. Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D. Chattanooga.
 Secretary, H. P. LARIMORE, M.D. Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D. Middleton.
 Secretary, ROBT. W. TATE, M.D. Bollivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D. Brownsville.
 Secretary, JAS. L. EDWARDS, M.D. Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D. Lexington.
 Secretary, C. H. JOHNSTON, M.D. Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D. Como.
 Secretary, J. H. MCSWAIN, M.D. Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D. Centreville.
 Secretary, JNO. S. BEASLEY, M.D. Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D. Waverly.
 Secretary, J. T. COOLEY, M.D. Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D. Whitleyville.
 Secretary, E. W. MABRY, M.D. Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D. Jefferson City.
 Secretary, B. M. TITTSWORTH, M.D. Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D. Knoxville.
 Secretary, S. H. HODGE, M.D. Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D. Tiptonville.
 Secretary, J. D. ALEXANDER, M.D. Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D. Ripley.
 Secretary, W. D. MILLER, M.D. Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D. Kelso.
 Secretary, J. M. CULLUM, M.D. Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D. Loudon.
 Secretary, T. J. HICKMAN, M.D. Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D. Jackson.
 Secretary, E. K. McNEIL, M.D. Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D. Chapel Hill.
 Secretary, T. E. REID, M.D. Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D. Mt. Pleasant.
 Secretary, M. M. COOK, M.D. Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D. Madisonville.
 Secretary, J. E. DAVIS, M.D. Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D. Clarksville.
 Secretary, J. C. MORRISON, M.D. Clarksville.

MORGAN COUNTY.

President, ————
 Secretary, G. R. TODD, M.D. Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D. Mason Hall.
 Secretary, JAS. F. DARNELL, M.D. Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D. Livingston.
 Secretary, W. A. REED, M.D. Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D. Isabella.
 Secretary, K. E. ROGERS, M.D. Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D. Chestnut Mound.
 Secretary, L. D. J. ENSOR, M.D. Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D. Evensville.
 Secretary, W. B. WILLIAMS, M.D. Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D. Cardiff.
 Secretary, G. C. G. GIVAN, M.D. Harriaman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D. Greenbrier.
 Secretary, B. F. FYKE, M.D. Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D. Murfreesboro.
 Secretary, RUFUS PITTS, M.D. Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, DR. L. S. TILSON.....Erwin.
Secretary, DR. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION


VOL. II.

NASHVILLE, TENN., OCTOBER, 1909

No. 6

INDICATIONS FOR SURGICAL INTERVENTION IN PEPTIC ULCER—CHOICE OF OPERATION.

JNO. A. GAINES, M.D., NASHVILLE.

N presenting a paper on this subject I feel it incumbent to say that while I can present nothing new in personal observation, yet I feel it well, in the brief time allotted to me, to state some facts evolved by the experience of others—most notably by American surgeons; and especially to urge the profession to utilize these facts by recommending at a more favorable time a surgical procedure that offers such positive, immediate relief, and almost as positively prevents the later disastrous consequences of peptic ulcer.

By peptic ulcer is meant an ulcer developing in that part of the digestive tract, the contents of which are normally acid. This embraces all of the stomach and that part of the duodenum situated above the entrance of the biliary and pancreatic fluids, which embraces about two inches of the upper duodenum.

Peptic ulcer is either non-indurated or mucous ulcer, or it is indurated or callous ulcer. Anatomically they are found about equally frequent in the stomach and duodenum; being as W. J. Mayo has pointed out, very much less frequent in the "canal of Jounnesco," the last inch of the stomach. Ulcers in the stomach are found most frequently on the lesser curvature, and next in frequency on the posterior wall—and at times are found saddle-shaped reaching down both front and back. They are

most frequently single, but there may be a great number distributed at intervals over the entire mucous surface. Duodenal ulcer is found in the upper one and one-half inches, beginning about three-fourths of an inch below the pyloric sphincter. Mayo found 96 per cent of duodenal ulcers in this location.

The classification of peptic ulcer therapeutically must needs be arbitrary, and subject in the early stages to conditions of more or less experimental tests—or dealing with accidents of greater gravity. I will refer to this later.

The indurated or recognizable ulcer of the stomach is found only slightly more frequently in men than in women. While the duodenal ulcer is more than twice as frequent in men than in women, Mayo believes this due to difference in the anatomical relations in the two sexes. In the male the upper part of the duodenum rises higher for a distance which holds the acid chyme in longer contact with the mucous membrane. In this limited paper I shall not consider the diagnosis of ulcer further than to say, that neither symptoms, physical signs nor laboratory examinations, taken separately, can be relied upon, and it is often impossible by all methods of examination to diagnose the trouble until some complication or sequel develops, as hemorrhage, perforation, obstruction, dillitation or malignancy. And

I refer to special texts for the technique of this all-important part of the subject.

TREATMENT.

The non-indurated ulcer is purely a medical disease, and only the occasional complications, as hemorrhage if persistent, or perforation, make it a surgical disease. In the first place, it is not possible to diagnose such an ulcer with any degree of accuracy, and when suspected a medicinal and dietetic regimen should be followed.

All early ulcers should be regarded as medical cases, for a *reasonable* time; excepting those rare cases in which the primary symptoms are due to perforation or where the hemorrhage is persistently threatening and frequent and fails to respond to medical methods.

(I saw, in consultation, such a case in a young lady about twenty years old—a few years since—in which there had been only slight digestive disturbance for a day or two, who suddenly complained of gastric pain, and in two hours from onset, when I saw her, was in such a state of collapse that nothing could be done. She died without reacting in about four hours and a half from onset, with every evidence of hemorrhage. (Autopsy was not done.)

The prime question is, after diagnosis, how long should a recognized ulcer be treated as a medical case?

It is now a well recognized fact that all cases not yielding to such a course should be operated without too great delay, not only as the best and safest treatment of the ulcer *per se*, but as the best method of preventing the disastrous sequel.

I hold that any recognized ulcer not yielding to rest in bed, with proper medicinal and dietetic treatment, in from six to eight weeks at most, should be considered as a surgical disease, even with-

out the development of accidents or threatening symptoms.

Rodman (Surgery Gynecology and Obstetrics, January, 1908) shows that of all cancers, 35 per cent occur in the stomach, and that from 50 to 90 per cent of these (various observers) undoubtedly originate in active or healed ulcer. They have been seen continuous with the symptoms of ulcer, gradually changing from those of ulcer to a typical picture of cancer, or they have been known to occur as late as twenty-five years after all symptoms of ulcer had disappeared. Cancer has followed ulcer of the stomach as early as sixteen years of age or as old as seventy-five years of age, but are most frequent from thirty to fifty.

Rodman advises an exploratory incision in all cases of ulcer that do not yield to other measures in "a reasonable time." Practically all authorities now agree that peptic ulcer should be treated by gastro-enterostomy when, after six to ten weeks, other treatment fails to give a symptomatic cure.

Kocher (1903), after summing up the results of gastro-enterostomy, says: "From such deductions we may conclude that the operation for the results of ulceration is the true cure for this frequent and serious disease." The same views are expressed by Mayo, Robson and Czerney, according to the latter of whom "the operation has an extraordinarily beneficial influence on recent ulcers of the stomach."

W. J. Mayo (Surgery, Gynecology and Obstetrics, May, 1908) suggests, when operation is done for acute hemorrhage, the ulcer should be sought and excised, or through the opening into the stomach the bleeding point closed with catgut suture on mucous surface, and reinforced with linen suture on peritoneal surface opposite the ulcer thus closed, with gastro-jejunosomy associated.

The ideal surgical treatment is by gastro-jejunostomy, with or without dealing directly with the ulcer, as recommended by Mayo.

Gastro-enterostomy was first suggested by Nicoladoni at Vienna and done by Wolfler, September 27, 1881. The anterior anti-peristaltic method was used. Von Hoker first did the posterior operation. While many eminent surgeons have added to our knowledge of this subject, yet to W. J. Mayo in this country and Moynihan of England are due our most sincere appreciation for developing a technique that gives less than 5 per cent mortality in early cases.

I wish to present a late case in which the enormous benefits from operation are beautifully portrayed.

Miss A, age fifty-six, single, seamstress, came to me from Evansville, Ind. History negative up to four years ago. At the time this illness began she weighed 148 pounds and in fine health. In the spring of 1904 she began to suffer with acute gastric symptoms. A diagnosis of probable gastric ulcer was made, and after four months of suffering and almost constant vomiting, she began to improve and was able to begin sitting up, although very much emaciated, and gradually regained her strength and flesh.

In the spring of 1907 she again began to suffer with digestive symptoms, pain in the stomach, nausea and vomiting. After a few weeks the acute symptoms of pain were practically relieved, but the nausea continued, and she began to have symptoms of pyloric obstruction. In June she had reached such a degree of obstruction that no solid food would pass through pylorus, and after a few hours would be vomited. This was not associated with intense pain, but discomfort and nausea. By August she was losing flesh rapidly, confined to bed most of the time, and rectal feeding was

largely relied upon. She came to me in October, 1908, and I concurred in diagnosis of pyloric obstruction. She was very emaciated, weighing less than ninety pounds, a woman of rather small stature. There was no evidence of disease anywhere except in region of pylorus. There an indefinite mass could be felt, reaching up under border of right costals. This was moderately tender and quite unmovable. There had been at no time evidences of hemorrhage, but nausea was continuous. She would take water and strained soup or clear meat broth, and in a few hours her distress would become so great that, at this time, she would be forced to relieve herself by emesis, and was relying on nutritive enemata for nutrition. Operation was advised, but, as I was in doubt as to whether malignant change had taken place, and would not promise anything very encouraging, she refused for six weeks. At the end of this time she had grown so weak she could not sit up but a few minutes. Her skin lay in folds and would hang loose on her body. Her distress had become so great she could only get moderate relief by sitting propped up in the bed, with her chest resting against her knees. In this condition she at last asked for operation, which was done on the 24th day of November. The incision was made through right rectus near median line, and a mass of adhesions was found surrounding the pylorus, binding the stomach to liver and transverse colon. This did not look like malignancy to Dr. Cooke, for whose efficient assistance I am indebted, or to me. In either case the patient's strength would not admit of resection, and post-gastro-jejunostomy was decided on. Owing to many adhesions, this was quite difficult, as the parts could not be lifted out for ready access. The first five inches of the jejunum was utilized without a loop, making what is termed the anti-

peristaltic anastomosis. Using clamps—and suture—making a two-and-a-half-inch opening between stomach and bowel. Using every precaution to select the lowest portion of stomach, and as near the beginning of jejunum as possible, with due regard to the natural direction in which the bowel lay before operation. The patient was so prostrated that a saline hyperdermoclysis was started as soon as the patient was anesthetized. Ether being used. She came off the table in fair condition, and in an hour, her pulse becoming rapid and weak, the hyperdermoclysis was repeated. This was not required again. About eighteen hours after the operation she vomited eight ounces of almost pure blood and became quite weak. She was given strychnia by hypodermic, and twenty drops of adenalin in

an ounce of water every two hours by the mouth for four doses, and every six hours in fifteen-drop doses for twenty-four hours. With continuous drip enema of saline, whiskey and peptonized milk. After this recovery was continuous, and she has made a perfect recovery. She has gained forty pounds, eats anything she desires and as much as she wants. She has an enormous appetite, and has gained strength to go out as she desires and do several hours' housework each day. There has been no vomiting or distress after the first twenty-four hours following the operation, and, unless there should be a cancerous growth, she is completely cured.

Since writing this paper in January I have learned that her health remains perfect, and she is now at her regular work without discomfort on April 1, 1909.

RATIONAL DRUG THERAPY.

E. R. ZEMP, B.S., M.D., KNOXVILLE.



HERAPEUTICS is the keystone of the arch upon which medical science rests. Within its magic circle there is being slowly, but surely, worked out a cure for every ill that flesh is heir to. This is the one branch of medicine that all other branches turn to with outstretched arms and cry for aid, and, be it said to its everlasting honor and glory, this call is seldom made in vain, for where the cure is wanting, relief hastens to obey. A drugless therapy is a beautiful thought to commune with during the quiet hours of business depression, but when the fight is on in earnest, and real men are wanted at the front to repel the invading foe of disease, it is the man behind a full knowledge of the physiological action of drugs that does the most effective work. We have heard much of the impotency of drugs,

but a careful analysis of this statement very often reveals an impotency of men instead. Though our system of drug therapy likes a great deal of being a perfect one, many of the shortcomings attributed to it are not founded upon fact. The average physician knows but little *materia medica*; the average surgeon knows even less. That doctors will attempt to practice an art they know so little about is another illustration of man's inhumanity to man, and the fact that more people do not die under such a condition proves to my mind that the mercies of God most certainly do extend unto the third and fourth generations. There are two chief causes for this unfortunate state of affairs. The first is faulty teaching of *Materia Medica* in our medical schools; the other is the failure of the graduates to continue in the study of this

most important branch. After he gets out of school he searches for somebody's prescription for some particular disease, losing sight of how the drugs bring about a change for the better. Thus he begins to deteriorate until he reaches that stage where most physicians land—a stage in which drugs are used to cure stated diseases, instead of being used to overcome abnormal physiological conditions, which is really their most useful function. Thus as time goes on we find the now somewhat older graduate flirting with “proprietarys,” and perhaps with a few, though very few, “patents.” There is something so enticing about these nice-looking mixtures, and the reading on the label is a veritable appeal to reason, so the mixture is prescribed for the disease, and the therapeutic value of the drugs is entirely overlooked, or forgotten. This is an unfortunate condition for both doctor and patient. If we are to get out of medicine all that is best for our patients, we must thoroughly understand our implements of warfare, so that they will become instruments of precision, which, when wielded by the master hand, are in the majority of cases invincible. A brilliant diagnosis is often ruined by poor treatment, and a patient who will forgive an error in nomenclature cannot forgive a treatment that liberates his soul. It is only by keeping in mind the physiological action of drugs that we are able to keep from making ridiculous, if not fatal, blunders in the treatment of our patients. Therapeutic idiocy is no more excusable than the reckless use of firearms. The application of remedies to disease should not be a matter of conjecture, but the physiological action of each drug being known, its application becomes comparatively easy. It is true that some remedies are used empirically, but when the pathologist tells us what causes the disease, we can generally explain how our remedies bring about the cure. In the application

of remedies to disease, according to their physiological action, reason and knowledge must dwell together in harmony. A man may reason well, yet if he has not the knowledge to back up his reasoning, he is as sounding brass and tinkling cymbal. On the other hand, if he has the knowledge but no reasoning faculties, he is as a boat without a rudder, which, driven here and there by the winds of opportunity, seldom lands, except by chance, in the haven of success. The following anecdote illustrates my meaning:

Uncle Rastus was telling the doctor what a powerful misery his son Jim had in the bowels, and was seeking professional advice. “How long has he been sick, Uncle Rastus?” asked the doctor. “’Bout three days, sah,” was the reply. “Have you been doing anything for him?” “Oh, yes, sah! I’s been a-docterin’ him right smart, but it don’t seem to hope him much.” “What have you been giving him,” queried the doctor? “A pill of alum and rosin,” was the reply. “What made you give Jim a pill of alum and rosin, Uncle Rastus?” “Well, sah, Jim said how he feels like sum’in’ buss loose in him, so I gib him de alum to draw de buss togedder, and de rosin to hold it thar.”

You will observe that Uncle Rastus’s reasoning was of the best, but his therapeutic knowledge was a little off color. There are a good many Uncle Rastuses in our profession. A meager knowledge of materia medica breeds two classes of therapeutic artists. One is the therapeutic Nihilist, and the other is the therapeutic Egotist. Whenever you hear a physician decrying all drugs as being worse than useless, you can be sure of his coming under one of the following conditions: He has probably never used many of the drugs he is decrying; if he has used them, he has used them incorrectly. He has some pet theory, or pathy, of his own, with which he expects to gull the public, or, be

it said in all sorrow, he may think himself a surgeon. Therapeutic Nihilist, did I say? Therapeutic Ignoramus would probably be more appropriate, for if in the business, political, or religious world any scheme was launched with so little intelligence behind it, the result could be nothing less than a dismal failure. To say that the bull's eye cannot be hit because one fails to hit even the target, is very poor logic. The nihilist may be honest in his belief that drugs are useless. He is perhaps abiding by the dictation of his conscience, but the trouble is his conscience needs enlightening, just as does the conscience of the savage mother who throws her baby to the alligators to appease the wrath of an offended God.

In the therapeutic egotist we find the man who is full of both himself and the materia medica, but just where he acquired his wonderful knowledge of drugs is not known to science. He it is that aborts pneumonia and cuts the lay of typhoid fever into golden hours. He causeth the prepuce to shrink and absorbeth ye appendix. With a vegetable curette he removeth adenoids, and of membranous croup he hath no fear, for a trusty tablet lieth close by. For blood infections he hath a silver ointment, and his favorite prescription makes sport of the ills peculiar to ye women. Specifics galore hath he, and the ease with which he juggles into various combinations a hundred different remedies would make a Hindoo magician drink poison.

A thorough knowledge of our remedies keeps us from being placed in the absurd position of trying to accomplish the impossible. It makes us realize the limitation of our remedies. It drives us early to the surgeon in surgical cases, and saves us from the reproach of our patients. Whether the Egotist believes all he tells, may be so or not, but physicians, in regard to drugs, are certainly a very credulous

class. There seems to be in the minds of some a blind faith in the drugs they are in the habit of prescribing. I will admit there is a fascination, deluding and ensnaring, in giving drugs for the many ills of the body, and often we attribute to our remedies a power they do not possess. A patient is sick. We give our remedy. The patient gets well. We congratulate ourselves, forgetting Providence. It was a wise man that said our patients sometimes get well in spite of our treatment, but how some of them do not must puzzle Aesculapius himself. I firmly believe in the administration of drugs for the relief of disease, but I do not recommend a blind infatuation that has neither rhyme nor reason in it. The fact that so many physicians use proprietaries is due to this credulity plus a deficiency in knowledge of their materia medica. An agent comes into the office and with typical strenuosity delivers his samples and his speech. The echo of his voice has scarcely died away before some patient of that doctor has paid one dollar for the privilege of taking a bottle of medicine that neither the patient nor doctor knows a thing about. No analysis of the case has been made; no careful weighing of the remedies suited to the case has been thought out, but a simple twist of the wrist, and the thing is done, at a great saving of mental wear and tear, which eventually dwarfs the intellect. He who constantly relies upon the proprietary house to furnish the brains to run his practice, can never be sure of what his patient is getting, and without this knowledge and a careful analysis of each case in regard to the drugs required, it is impossible to broaden out into that state where experience is ripe and judgment is clear; where one is conscious of his power and knowledge, contributing to an ease and grace of motion that can only be obtained by the diligent watching of an unclouded field of facts. All proprietaries

are not bad; it is the principle involved in their use that is debasing. This same principle is found in what is known as routine prescribing. A routine therapist always has favorite prescriptions for various diseases. He has reduced the art of medicine to an exact science. All patients are reduced to the same level and treated according to a thumb rule, for it is not really the patient but the disease that the routinist seeks to relieve. Hence, as the years come and go we find him in the same old rut, perfectly satisfied that he is the best doctor in that neighborhood. One's views may be good enough for one's self, but they are not good enough for one's patients, unless they are formed from the impressions of a relentless research for all the knowledge obtainable, and from the inspirations received in the associating with the truly great men of our profession.

There have been many attempts to discover something better than a drug therapy. Electricity, massage, vibration, hot air, electric light, homeopathy, osteopathy, mental science, Christian science, and a host of others, but they have all been in vain. The partial success of one and all of these is due to the fact that there is a grain of truth in each, which grain has been hammered into an infinite platitude. Now the pendulum is swinging back and the best physicians are holding fast, and studying more closely, the friends who have stood by them in the hour of need. We will follow after strange gods no longer, but will learn to handle more skillfully the weapons that are placed before us, and in so doing therapeutics will attain in the immediate years to come the zenith of its success in the conquering of disease.

What, then, constitutes a rational drug therapy? First, there must be a thorough knowledge of the physiological action of drugs to guide the movement. This in

itself will give us simplicity in prescription writing. Its correct application demands a knowledge of physiology and pathology. Second, What drug is indicated? If we know the effect we desire to produce and know that a certain drug will produce this effect, the application is easy. Every drug that we prescribe should be brought under the fire of that eternal question, Why? If we cannot give a satisfactory reason for it being in the prescription it should be left out. There should be a clear-cut, well-defined indication for every drug we use. This eradicates all gun-shot prescriptions, all ready-made prescriptions of pills and tablets, and nearly all proprietaries. Third, is the preparation prescribed an active one? Here is where a great many prescriptions fail. The drugs called for are all right and have been carefully selected, yet the patient is not benefited. What is the matter? Poor drugs. I believe if the activity of a prescription as filled at the ordinary drug store were tested, a remarkable revelation would be made. Drugs deteriorate with age. Fluid preparations change materially in their strength. Time produces certain chemical changes associated with precipitates that make the preparation absolutely worthless. When possible, it is best to use the alkaloids, as they do not deteriorate with age and are always the same strength. Unfortunately, many drugs are not represented by a single alkaloid, however in morphine, atropine, eserine, cocaine, strychnine, caffeine, aconitine, apomorphine, codeine, hydrastine, hyoscyne, pilocarpine, quinine, spartine, we have reliable and official alkaloids that can be substituted for crude drugs with advantage. Fourth, Was the dose sufficient? It is highly important that a correct dosage be maintained. But what is the correct dose? No two patients will take exactly the same dose. What is

one patient's meat is another patient's poison. We have rules by age and rules by weight, but none of these will hold good, as every patient is a law unto himself. Idiosyncrasy plays an important role in the formulating of correct dosage. Pain, disease, habit, sex, age, temperament, climate, mode of administering, and many other things, powerfully influence dosage.

The only correct way of administering medicines is to give a small dose frequently repeated until the patient is relieved, or until the physiological action is manifested, then decrease, lengthen the interval, or stop entirely, as the case demands. In no other way can you be sure that the patient gets the correct dose, besides it possesses the great advantage of being perfectly safe.

Fifth, Did the patient get the medicine as directed? What is perfectly clear and easy to the doctor may be very confusing to the patient. Many ludicrous mistakes are made by patients, and sometimes fatal ones. We should see that the patient gets his medicine as directed.

A rational drug therapy therefore depends upon a thorough knowledge of the drugs we are using; a well-defined indication for the use of the drug; a reliable preparation; a correct dosage, and the careful administration of the drug according to directions. When one fails to get results from the giving of medicines, let him examine into all of these conditions before he draws the conclusion that drugs are useless. If all of these are as they should be, the chances are overwhelmingly in favor of his getting good results.

I am a firm believer in the use of drugs for the cure and alleviation of disease, at the same time I realize that they cannot accomplish the impossible and that they have their limitations. The more I study my *materia medica* the fewer drugs I use. The man that uses many drugs is not by

any means the best therapist, but it is he that knows well the drugs he does use that gets the best results.

DISCUSSION ON THE PAPER OF DR. ZEMP.

DR. W. H. WITT, of Nashville::

I am sure we have all enjoyed very much the paper by Dr. Zemp, and particularly his reference to therapeutic nihilists. It would have been more to the point if he had referred to therapeutic egotists, those who let us do their thinking for them. We were particularly interested in his remarks in which he laid down the general principles which should guide us in the application of drug treatment. There is nothing so difficult probably in medicine as to select drugs to meet the demands of the cases that we are treating. It is sometimes our own fault that we cannot do these things. It is sometimes the fault of the world of practice. It is often the fault of the world of pathology, and the first desideratum for us as students in the use of drugs, or in learning how to use drugs to combat disease or the symptoms of disease is to study thoroughly the natural history of disease. I want to say on this point, that all the burden of teaching therapeutics is by no means upon the one that is classed as an instructor in therapeutics, but it is equally or probably more upon the shoulders of the one who teaches general medicine. In those institutions where disease is taught at the bedside, it may be we will differ from what the doctor and many others have called therapeutic nihilists and call them therapeutic egotists. If a physician lectures on bronchitis or pneumonia and recommends certain drugs to be used, if a class of students cannot watch the thirty or forty cases through the course of treatment, he leaves the impression on those students that those agents are good for nothing; yet if the same physician in the course of a year carries his class to five or six or twenty-five cases of pneumonia at the bedside, and cures those patients and indicates from day to day what may be useful, the student learns a great many of the agents recommended are not of much value as a general treatment for pneumonia, but that they are of value probably in these instances, and of no value in many other instances. The same is true practically of other diseases followed from day to day. Students will go out, after handling these cases, with a much better idea or knowledge of therapeutic limitations than they would if the physician lectured to them off-hand.

As the essayist has said, it is important that students be taught, as well as medical graduates, the action of drugs because new drugs are being constantly brought before the profession and their actions have to be studied, or old drugs have to be re-studied. It is important that these things be taught thoroughly, and when we instruct students in that cautious way, not giving them any reason to put too much confidence in drugs, they will develop a much more rational drug therapy than by using drug A, B, C, D, E, F, G, H, I, and so on.

The expression, "therapeutic nihilists," has been overused. So far as I know, there are now no therapeutic nihilists except Christian scientists and similar people. Dr. Osler is considered a therapeutic nihilist, yet if you were to spend a good many years with him in the practice of medicine, and use your ideas and judgment, you will find the right therapeutic indications, the drug indications put down in text-books, like that of Osler's, and study them carefully in the light of a rational consideration of the cases you have had, you will come to the conclusion he was not far wrong. We often draw conclusions about the value of drugs when errors in diagnosis have been made, and the first object, of course, in treating disease is to make a thorough and accurate diagnosis. When a thorough diagnosis is made, so that you can watch the case on the basis of that diagnosis, you will come to the conclusion that drugs do not accomplish what they are expected to do. Time is the greatest cure of disease, particularly in the acute infectious diseases.

DR. C. A. ROBERTSON, of Nashville:

To my mind, this is one of the most important subjects that can be brought before this Association. It is important from the standpoint of the general practitioner, and the rank and file of the profession. It is important for the reason that great therapeutic evils are being practiced every day. It is important, too, because the scientific application of drugs for the relief and cure of disease is on the wane and has been on the wane during recent years. It has been my experience and observation that specialists, particularly along surgical lines, show a lack of knowledge of the pharmacodynamic action of drugs and the therapeutic application of them in the treatment of diseased conditions. There is a strong tendency, I believe, on the part of the so-called modern physician to therapeutic nihilism. I heard Dr. Osler once say in a clinic that the all-important thing in the treatment or

management of the sick was to make a diagnosis; after the diagnosis was made anybody could treat the patient. Of course, he did not mean that literally as he said it, but that adds weight with a great many of the student-body.

The teaching of scientific therapeutics in medical schools is a question that has been very greatly neglected, so much so that many physicians after going out into their respective fields to practice depend upon semi-proprietary and quasi-patent preparations as their therapeutic armamentarium. A diagnosis of prolapsus uteri may be correctly made, but the man who will make that diagnosis will not infrequently use *Ponka* compound for its relief. And so on down the line, any number of these proprietary preparations will be used. I, for one, believe that in prescribing for our patients we should formulate our prescription to fit the disease, very much after the fashion that a tailor cuts a coat to fit the man. I believe it is the inherent duty of every practitioner of medicine to be extremely careful about the medicine that he sends down the throat of his patient. It is a great privilege that he has, and it is one that is easy to abuse, and I believe that this paper, while it is, perhaps, of ultra color in both directions, if we will study it, and take it home to our own lives and in daily practice, we can draw valuable and important lessons from its teachings. I want to thank the essayist for having brought the subject before the Association.

DR. JOHN A. GAINES, of Nashville:

I want to thank Dr. Zemp for presenting this paper. It is one of the most excellent papers we have had presented before this body. It brings up a train of thought in connection with the application of our science that I think very few practitioners or surgeons will fail to consider. The essayist suggested that, perhaps, surgeons were more at fault than the general practitioners. We have very few men who do surgery, that do surgery absolutely and alone. Some one has said that to be a good surgeon, a man needs to be a good therapist twice, once before in the preparation of his patient, and once after in the management of the case. That is true where a man deals in a scientific manner with surgery. A knowledge of the therapeutic application of medicine is just as important to the surgeon in the field in which he acts, to say the least, as it is to the internist. There is no surgical condition that does not require as careful thought, so far as the application of medicine is concerned in the limited field demanded

as we will find in the ordinary application of therapeutics. I believe the disregard for the therapeutic action of drugs on the part of the internist has contributed to the surgical branch of the profession.

The essayist certainly brought to our attention some very important questions both as to ignorance and nihilists in medicine. We frequently see men who underestimate the power and value of properly applied therapeutics. We see others who overdo the question and apply the shotgun prescriptions that have been suggested largely because somebody else has used them, or largely because some proprietary house has suggested their use. If not, we find he has in his researches found that a certain class of drugs are good for disease and applies a combination of drugs which, if not harmful, are not curative.

I want to indorse the thought carried out in the paper of the essayist and thank him for bringing it so forcibly to our minds, even though he has gone to some extremes. We can find a happy medium in the paper and can certainly do good if the suggestions are followed.

DR. JOHN A. WITHERSPOON, of Nashville:

I do not feel that Brother Robertson meant one remark he made. If he did, I cannot let it go unchallenged. He said, in all cases we should apply our remedies strictly to the disease. From my observations, I should say that each disease, which means sickness, is a law unto itself, and I would rather apply my remedies to the individual case. There are a great many things to be considered when you come to write a prescription for a sick man, not the disease always because we have specifics, but we must consider the conditions of the surroundings. We have got to consider a man's vitality; in other words, every phase must be considered, and the remedy applicable to that disease in that man may not be applicable to the same disease in another man.

While I endorse a great deal that has been said by the essayist, I believe that the importance of diagnosis, first, is very great; nor would I underestimate a thorough knowledge of drugs. But if you will combine a good diagnosis with a thorough knowledge of drugs, and then if you want the essence of success, add a little tincture of common sense, and you will get your better results.

DR. ROBERTSON: If I made such an impression upon Dr. Witherspoon it was wholly unintentional. I always feel that diagnosis is the first

essential, and then treatment adapted to the individual case along scientific lines.

DR. WITHERSPOON: I accept the apology.

DR. ZEMP (closing the discussion):

In my paper I made a plea for a study of the physiologic action of drugs. You believe in drugs. If I asked a man whether he believed in the Bible, he might say, "No." The chances are that he has never read his Bible, and he does not know whether he believes in it or not. In the same way, practitioners have not used drugs correctly, and that is why they do not believe in them. Let us suppose you write this prescription: Tincture nux vomica, 10 minims; hydrochloric acid, 10 minims; essence of pepsin, enough to make a teaspoonful, three times a day. If the patient comes back day after tomorrow and is no better, then you put him on something else, and still he is no better. You do not know whether the patient has taken the medicine or not; you do not know whether you have given a sufficient amount, or not. You have guessed at it. My plea is for us to go into details and investigate carefully each case.

DR. WITT: What is the matter with the stomach?

DR. ZEMP: What are you treating the patient for? I do not think I would give a man a prescription without knowing what is the matter with him. That is a foregone conclusion.

DR. WITT: You say we change prescriptions every day.

DR. ZEMP: You may be in doubt as to what is really the matter with the patient, hence you change your prescriptions, but I am taking it for granted that you do know what is the matter. Even when you have made a correct diagnosis, if you are not certain the drugs are active and the dose sufficient, and the patient is getting doses such as you want him to get, you are in the dark. First, investigate the drugs or active preparations, then give small doses, frequently repeated, until you get the physiologic action. If you get the physiologic action of the drug and the patient is no better, then it is evident that that particular drug will not relieve him. Make use of some other drug.

DR. Witherspoon made a good point about those practitioners who treat the disease and not the patient. A man may have a favorite

prescription for cases of pneumonia, but there are no two people who have pneumonia alike. Some will abort in forty-eight hours, others in nine days, and in those cases that abort in forty-eight hours the practitioner probably gets credit for curing them. We must treat the individual;

by a careful investigation of drugs, by understanding their physiologic action, by seeing that the patient gets what you prescribe, and by having some idea, at least, of what is the matter with the patient.

LUNG PUNCTURE AS A THERAPEUTIC MEASURE.

T. J. COBLE, M.D., SHELBYVILLE.



THIS line of treatment is indicated when you have hypostatic condition, or a hepatised lung following pneumonia, when there has been a faulty resolution, and a failure on the part of nature to clear up the lungs.

This line of treatment is especially indicated in an asthenic patient, that is very weak and much debilitated, for in this class of patients the circulation is very poor and your absorbing power very much below par.

This puncture is preferable to blisters in these conditions for the following reasons:

First. It is more certain and much quicker, for the reason that this is a chronic, or a subacute inflammation, and the hope is to get resolution by increasing the blood supply, or, in other words, to develop an acute inflammation out of the chronic, and thereby stimulate nature to complete its work.

I know of no way that it can be done as effectively as with a simple puncture of the lung.

Second. The puncture is practical, without pain or danger to the patient.

Third. With the puncture your irritation is in the lung, the seat of the disease, and with the blister it is on the chest wall, and does not increase the blood supply where it is needed.

Fourth. After the puncture of the lung, resolution usually takes place in from three to ten days, and your patient is

relieved of the necessity of taking the nauseating absorbent mixtures that are usually prescribed, such as the iodides, bichlorides, etc. This puncture must be done aseptically, as any other surgical operation.

I use a large aspirating needle; in the first place, because I always have one; second, on account of the convenience of using the syringe as a handle.

You may select any locality that is admissible for the aspiration of the plural cavity. I usually prefer the mid axillary line, and after thoroughly preparing my field of operation and my needle, I freeze the parts with ethel chloride, with the patient in either a sitting or a lying posture. I puncture the chest wall as though I were going to asperate a plural cavity, except that I plunge the needle into the lung structure, then withdraw the needle from the lung, changing the position of the needle without removing it from the plural cavity, then plunge it into the lung again, in this way puncturing it in three or four different places, with only one opening externally, then remove the needle and cover the puncture with colodion.

I have used the puncture in at least a dozen cases, with good results in every instance and without any untoward result whatever.

I will report the first two and the last case.

First.—Floyd H., boy eight years old, whom I attended in May, 1898, with

pneumonia. He was a delicate boy. The pneumonia ran the usual course for the first week, but afterward developed the subacute form, leaving him with a hepatised lung.

After treating him for thirty days with blisters, iodides, and other absorbents, the lung was still in a solidified condition, and the boy was very weak and much emaciated, temperature ranging from $99\frac{1}{2}$ to 101 degrees, respiration about 30, circulation from 110 to 120.

I had despaired of his life, and after a consultation with my father, the late Dr. N. B. Coble, we decided to aspirate the lung, with the result that the boy's lung cleared perfectly in the short space of one week's time.

His convalescence was very rapid, he made a complete recovery and has been in fine health ever since.

Case No. 2.—Mrs. S. S., age 24, previous health very good, family history decidedly tubercular, her father, brother, and sister having died with tuberculosis.

I was called to see her in June, 1899, and found pneumonia, with involvement of the two lower lobes of the right lung. The patient ran a similar course as Case No. 1, developing a subacute form. The lung would not clear up, and after pursuing the regular line of treatment for about six weeks, without any beneficial results whatever, I had consultation, and we decided to puncture the lung.

The result was that the lung cleared entirely within ten or twelve days' time, complete recovery followed without interruption, and the patient is in fine health today.

Case No. 3.—A young man twenty-three years of age, was bookkeeper in the Nashville & Chattanooga Railroad office in Nashville, Tenn. He was seen by Dr. Marr, of Nashville, in March, 1907, who diagnosed the case tuberculosis, located in the apex of the left lung. Microscop-

ical examination by Dr. Litterer confirmed the diagnosis. I saw him for the first time in April, 1907, and confirmed Dr. Marr's diagnosis. I was called again to see him in May, with pneumonia in the lower lobe of the left lung. The case ran the usual course for the first week, then developed the subacute form, as in the two cases already reported.

The diagnosis was confirmed by microscopical examination by Dr. Litterer, both pneumonia and tuberculosis.

He had had several hemorrhages before contracting pneumonia, and he had a number during this attack, which shows the rapid progress of the tuberculous condition. The upper lobe showed the tubercular deposit, the lower was left in a hepatised condition.

I hesitated to puncture the lung on account of his tubercular condition, for fear that I might produce an abrasion, and thereby open a fertile field for secondary involvement. I discussed the case with several of my colleagues, but they all rather discouraged the idea of my puncture operation, and advised the usual routine treatment. So I used several blisters and gave him the iodides for about ten days without any appreciable results, then decided to shoulder the responsibility and puncture the lung any way, feeling confident in view of my previous experience, that I could not fail to get good results.

This I did, and without any appreciable pain at the time of the operation. But during the operation I allowed the escape of some air into the lung, and produced some slight emphysematous condition, causing a cracking sound, which produced some pain and great anxiety to the patient, but was relieved with five grains of Dover's powders, and the reassurance of the patient that he was all right.

The condition disappeared in twenty-

four hours, and there were no other unpleasant symptoms.

The lung was perfectly clear in ten days, and that lobe of the lung has been perfectly clear ever since.

I then took up the treatment of the tuberculosis, and had him a room built of wire gauze, on the south porch, and had him sleep in it at night.

He is still sleeping there, and has ever since, except a few of the extremely cold nights of last winter.

His medical treatment has consisted of carbonate creosote, tonics and nourishing diet. His general condition has much improved in every respect, his lung has cleared up, his cough has checked, his appetite is good, color fine, and his strength is above par. He has gained in flesh from one hundred and twenty pounds to one hundred and fifty, weighing more now than ever before. His normal weight in the past was from one hundred and forty to one hundred and forty-seven pounds, and he now looks the picture of health.

We have not had a microscopical examination made in a year, but every general symptom is good.

I have given this more in detail on account of the tuberculous condition, showing that puncture is admissible even in extreme conditions.

DISCUSSION ON THE PAPER OF DR. COBLE.

DR. W. M. McCABE, of Nashville:

Mr. President: The paper of Dr. Coble is a valuable one. It brings before this Association a method of treatment that has not been discussed previously. We all know the principle of healing depends upon the blood supply; it depends upon the condition in which the amount of blood that goes to the part must be loaded with opsonins and other elements that produce healing. If we have a chronic condition in the lung, the same as a chronic condition in any other part of the body, and the channels of blood are not open, the treatment should be to open these channels in any way possible. It has been demonstrated by Bier in Bier's hyperemic treatment, that by placing a bandage around a limb and retaining the blood within the part for a certain length of time, healing takes place. Dr. Coble's paper is based identically on the same principle. If you puncture the lung you stimulate the parts to activity; you bring more blood to the local spot, and in that way healing is produced. I believe Dr. Coble has given us a most valuable paper.

PERINEAL PROSTATECTOMY—REPORT OF AN INTERESTING CASE.

GEO. R. LIVERMORE, M. D., MEMPHIS.

THE best method of removing the prostate gland has been a bone of contention among G. U. surgeons for some time, and as there is no possible way of settling the dispute (some cases being more suited to one operation, other cases to another, and still others to a combination of two or more), I shall confine my remarks to the perineal operation, as this was the one used in the case I have to report.

The advantages of the perineal opera-

tion, as given by Watson & Cunningham, are as follows:

First, rapidity of performance and it is a complete operation. Second, if successful it results in a complete cure. Third, it has the smallest mortality. Fourth, it supplies free drainage of the bladder. Fifth, it has a small percentage of failures and a large one of cures. Sixth, it does not require previous cystoscopic examination.

Murphy gives as his reasons for pre-

ferring the perineal operation: First, gives the best ultimate results. Second, accompanied by less danger than the suprapubic or Bottini operation, as regards (a) hemorrhage, (b) sepsis, (c) injury to neighboring structures, (d) life, (e) the drainage is excellent and favors rapid restoration of the bladder to its normal condition. Third, the period of wound repair is much shorter than by the suprapubic route. Fourth, the vesical control is almost uniformly good. Fifth, the relief of vesical irritation is great and the frequency of urination is reduced to about normal.

Young says "That perineal prostatectomy has proved in his hands the safest method for relieving prostatic obstruction; that it is a comparatively benign operation and can be employed in very aged patients; that, with proper retractors and tractor, the prostate can be exposed almost by blunt dissection, and the enucleation of the enlarged lobes can be carried out under visual inspection in a shallow wound; that all forms of enlargement, even great intravesical middle lobes, can be drawn down and removed through the perineum, and generally without tearing the bladder, urethra or ejaculatory ducts; that normal urination is established, and that incontinence is almost unknown; that the time has come for blind operations and the foolish fad of removing as much as possible of the prostatic urethra to end, and for surgery of the prostate to be done according to the dicta of modern surgery, under visual inspection and with due care of useful and non-obstructive tissues--the urethra and ejaculatory ducts."

Each person is entitled to his own opinion, but, regardless of what these men say, it stands to reason that the perineal route is better suited to some cases, while the suprapubic is better suited to others. The Bottini operation

has now been discarded by our best men. In the case I have to report I considered the perineal operation best, and performed it accordingly.

The report of the case is as follows:

Patient, J. G., white, age 78. Referred to me by Dr. William Krauss, of Memphis. Family history: Negative. Personal history: Always been a remarkably healthy man. History of present illness: Had gonorrhœa six years ago, and ever since has suffered more or less with frequent and painful micturition. For the past four years he has had to use a catheter, and was able to void only a few ounces of urine. When I first saw him, December 5, 1908, he was in constant pain, had to get up about a dozen times a night to urinate, and was catheterizing himself every six hours. The urine was very cloudy, foul, and contained a large amount of pus, blood, albumen and a few hyaline casts.

Examination: Residual urine, 6½ ounces. Prostate per rectal examination, size of a lemon, bulging into rectum. No cystoscopic examination was made, as was not deemed necessary.

Treatment: He refused operation, so was given urotropin gr. 5 in a glass of water t. i. d. and at bedtime. The bladder was washed out daily with a solution of argyrol 1 to 500, and about three ounces of this solution was left in the bladder after each irrigation. He was catheterized every six hours and given codeine for pain. At first there was slight improvement, but it was only transient, so patient finally gave his consent to an operation. It was performed December 18, 1908, at the Presbyterian Hospital, Dr. John Maury assisting and Dr. Louis Leroy administering the anæsthetic. Perineal prostatectomy following Young's technique was the operation performed. Seven large, fibrous nodules were removed, being easily shelled out

after splitting the capsule. The cavities were packed with iodoform gauze and a tube sutured in the bladder. The gauze was removed in forty-eight hours, and the bladder irrigated daily through the tube. The tube was removed on the fifth day. Sounds were passed on the seventh day and every other day thereafter. Urotropin was resumed on the second day after the operation. Patient did well, and, except for pronounced melancholia, made steady progress toward recovery. Was allowed to leave the hospital March 10, 1909, wound still draining. Passed urine once through urethra two weeks after operation. He did not continue to pass it regularly, but did so at regular intervals from this time on. About ten days after his return home he had a chill and his temperature rose to 102 3-5. Examination of his blood, by Dr. William Krauss, showed marked leucocytosis. No malaria plasmodia were found. An eliminative and supportive treatment was instituted as soon as sepsis developed. He had one chill in the morning and another in the afternoon of the next day, his temperature reaching 104, and followed by profuse sweating. The following morning he had another chill, temperature 104 and a profuse sweat. Seeing he was losing ground, despite the treatment, I determined to try the intravenous infusion of silver nitrate, as I had used it successfully in a case of puerperal septicaemia some months before. So at 8 p. m. I gave him a pint of 1-10,000 silver nitrate solution in the right median basilic vein. His temperature at this time being 103 and pulse 120. Immediately after the infusion he felt better, and his pulse dropped to 84. About one hour later, however, he had a very severe rigor, lasting forty-five minutes, and, according to the nurse, looked as though he were dying. His temperature rose to 106, and his pulse was so rapid and feeble it could

not be counted. Cold sponging and morphine grain $\frac{1}{4}$ hypo. quieted him, and he soon fell asleep. At 2 a. m. his temperature was 102 and pulse 132, and by 7 a. m. temperature was subnormal and pulse 118. Hot water bottles applied and hypodermic strychnine given. Temperature rose gradually during the day till 8 p. m., when it reached 103. He was given saline ounces 6, and whiskey ounce $\frac{1}{2}$ per rectum every six hours, and strychnine grains 1-30 hypo. every four hours. Liquid nourishment every two hours.

The following day his morning temperature was 101 and evening 102 $\frac{1}{2}$. The next day morning temperature 100 and evening 101, and on the following day reached normal and remained so.

He has continued to improve from this time on, except for a slight rise of fever several times, due, most probably, to indiscretions in diet and overexertion. The wound has closed and opened several times, but is now healed, and, I hope, permanently. He now has almost perfect control of urine and is free from pain.

The source of infection was from pads used on the perineal wound, for, after his return home, he discharged his nurse and was attended by relations, who were unremitting in their attentions, but, although instructed how to care for the wound, did not appreciate the importance of asepsis.

I am convinced that this man owes his life to the use of the nitrate of silver infusion. How it acts I am unable to say, but I do know that this otherwise hopeless case recovered after its use.

I have been able to find very little literature upon the subject. I am indebted to Dr. Louis Leroy for first calling my attention to it, and to Dr. L. W. Haskell, who kindly showed me some reports of cases published in the *Johns Hopkins Hospital Bulletin*.

I consider this case interesting from

the fact that the patient was 78 years and 9 months old when I performed prostatectomy, that the growths removed were very large, and that he developed

septicæmia and recovered—a feat wonderful in a young man; in his case is well-nigh unbelievable.

DEFINITE TERMS IN DISEASES OF THE STOMACH.*

E. H. JONES, M. D., MURFREESBORO.

ONE of the striking things in the present status of medical studies is the fact that terms which stood for much in the profession are giving place to more exact and more restricted designation. It is a characteristic of the whole history of medicine that its terminology, excluding such as has reference to the elementary facts of physiology and anatomy, is in constant flux.

Scientific study demands that the terms in use shall have definite meaning, and that they shall stand for something clear and recognizable. One of the most frequent terms in practice, in the clinical experience of the average physician is that of dyspepsia. It stands for, if it does not atone for, a multitude of diagnostic sins, simply because it is applicable to many various forms of the disease, and for divergent conditions which pass under its name.

The designation of dyspepsia is often made for want of recognizing the special features involved, but in all scientific fairness these should be considered.

It is a convenient general designation behind which hides often not only an easy-going professional conscience, but also a lack of scientific precision; either of these, to be sure, is a sin on the part of the practitioner and a source of injury to the patient. I am free to confess it is often very difficult to differentiate the manifold things that lurk behind disturbances of the digestive process, such as we

roughly denominate dyspepsia. It may often challenge him to unravel the complex of phenomena which constitute the pathological condition he finds; but, however difficult it may be for him, we can be sure he has no immunity from the labor which a circumspect examination entails, and which a scrupulous physician is always ready to address himself to, patiently and studiously. There can be no functional disturbance of the stomach without presupposing that there is present some correlative pathological condition of one kind or another. It may be in the motor activity of the gastric walls, or in the atonic condition of the mucous membrane of the stomach, or in anomalies of gastric secretion, and in a number of other possibilities.

All of these an accurate diagnosis will have to reckon with, if the therapeutics decided on shall be of any curative avail, or shall be defensible in the presence of our professional conscience. There is another aspect of the matter which, it seems to me, makes a more discriminating attention to these affections preemphory.

I think it is well borne out by statistics, and by the logic of physiology that gastric disturbances are the most frequent difficulties for which physicians are consulted, and that the cases of this kind increase in number, intensity and variety, along with the advance of civilization, refinement, diversity of diet, and the strain, stress and tension of our organism.

I cite the instance of atony, the

* Read by title.

forced enlargement of gastric capacity, through the habit of excessive eating, or the massing of non-nutritious food or drink.

This is quite reasonable, as it affects the mechanical sufficiency of the motor walls of the stomach. In a similar way food insufficient in quality and quantity may cause a depreciation of the stomach muscles as to motor power. Some go so far as to substitute in certain cases, for so clear a term as dilatation, the term mechanical insufficiency, simply in the belief that the latter is more relevant, and that the former has too large a compass for working utility. I need not add, of course, that the relation of the size of stomach and the elasticity of its walls are frequently disproportionate, and that this evidently constitutes an important phase in the digestive process. Merely for the sake of emphasizing the point, I recall a number of divergent conditions which are equally, though not generically, covered by the broad and popular term chronic dyspepsia.

Besides such gastric disturbances as are secondary and appear in constitutional diseases, as in kidney, liver and heart disorders, there are primary disturbances of the digestive functions of the stomach with respect to its secretion, its resorptive qualities, its motility, peristaltic action and its sensory responsiveness.

Acute catarrh of the stomach and mucoid degeneration of the cells in the vestibule of the gastric glands is commonly misnamed dyspepsia. With reference to chronic catarrh of the stomach, surcharge of mucous and reduction of acids simulate dyspepsia, but a careful distinction and designation should be properly and scientifically made. So also ulcer and erosions of the stomach precipitate conditions which are commonly called dyspepsia. The characteristics of

these maladies, local pain and excessive acidity, however, may be referable to gastric as much as to ulcerous and eroded conditions. The symptoms of dilatation and atony often lead the practitioner to identify them for dyspepsia, but in the one case we have an obstruction at the pylorus, in the other case a non-resistance of the stomach muscles.

Gastroptosis and enteroptosis are induced by local and reflex causes which must be recognized if the general term of dyspepsia, which is usually applied to the distress they produce, shall have any meaning. It will be readily admitted that they produce symptoms that refer to the stomach as much as to the intestines.

Hyperchlorhydria, hypochlorhydria and anachlorhydria of the stomach are indications of conditions to which the common term of dyspepsia cannot adequately apply. It does not require profound acquaintance with the etiology of gastric disorders to entitle us to the declaration that an abnormal chemical reaction is a respectable sign which a diagnostician cannot afford to ignore. We must make sure that the condition we find is either primary or secondary, just as we must determine that it is either gastric or intestinal.

Cancer of the stomach is another of these obstacles of proverbial dyspepsia which requires some skill in diagnostic discrimination in order to recognize. These varied ailments manifest themselves similarly. They often have a depressing effect upon the temperament, more or less intense in degree, and usually peculiar in its kind. The mental state ranges from a very moderate grade of depression almost up to hypochondria. This is marked in chronic stomach diseases, in which a mentally abnormal, and I might also say morally abnormal, condition ensues, which often becomes a burden to the patient and to the household

that has the care of him. The phenomena of overfeeding through whimsical one-sidedness in the choice of food, and underfeeding through a preference for foods within self-chosen limits, are characteristics incident to persistent gastric trouble.

But whatever the specific gastric difficulties may be, it appears to be the fate of the stomach to suffer, in addition to its organic troubles, more or less frequently, or more or less directly, through mental depreciation.

Our present terminology, however, does not make a distinction between such disorders of the stomach as are free from depressed spirit and such as are not. Still, popular usage of the term dyspepsia makes much of this matter, and popular usage, we must admit, is not entirely without some respectable claim, even if it is not erudite. It has associated with the term dyspepsia the idea of moroseness, whimsicality and misanthropy. We must not blame the laity for confusing things which are not held apart to a nice degree even inside the profession. So also with regard to gastric distress under pressure of food, eructations and many similar symptoms which the physician must single out. Then, again, it is essential that the relation be made clear which exists between stomach and intestinal difficulties. It would be quite unmedical to fail, or even blunder, in this fundamental discrimination.

Barring some theories in which the difficulty is dominant in one or the other, stomach disease is usually accompanied by intestinal disturbance, and *vice versa*, many chronic diseases of various portions of the organism give rise to functional sympathetic disturbances of the stomach. In the scope of this paper I could not begin to mention the large family of maladies that cause some disturbance of the stomach, to frequently continue until the

cause is removed. It can never be repeated too often that if we have nothing else to direct us in our diagnosis than the subjective symptoms, we shall not have more than a diagnosis of probabilities, mere surmises, which, of course, are unsafe and force us to combat by medicaments of an empirical kind. It stands to reason that the therapeutic effects in such cases can hardly be as successful as those we obtain after an exact diagnosis based on scientific examination. If we have determined that there is a pathological change of the stomach, we are not yet entitled, on that account alone, to give our treatment a decided direction, for pathological changes, as such, do not, in themselves, determine everything. The removal of functional disturbances which are incident to the pathological condition brings about influences that are favorable to the rehabilitation of the diseased organ.

When we address ourselves to the disturbance of function, we make a bid for such favorable influences as help to reduce distress and economize energy. We may make some of the disturbances nugatory by compensation through appropriate diet. But, after all, an exact examination of its contents is necessary.

For these examinations, the stomach tube has become our most effective and dependable instrument, and it is difficult to understand how we reached conclusions before we learned its great usefulness.

Its introduction into the practice of medicine has been unretarded ever since it was presented by Knissman, and has helped materially in advancing the study of stomach diseases and assisting in their diagnostics and therapy. It may be hailed as epoch-making, because of the great aid it renders to exact methods and scientific analysis.

A WORD FROM THE DRUGGISTS.*

MR. H. C. SHAPARD, SHELBYVILLE.

THERE is a widespread effort being made by the druggists of the United States, assisted by the drug journals, to call the attention of the medical profession to the U. S. P. and N. F. preparations. This movement was inaugurated by the American Medical Association.

At the last meeting of the Tennessee Pharmaceutical Association there was appointed a committee to make some of these preparations and furnish samples to the State Medical Association, and by the courtesy of the secretary we were allowed to present a paper. We present a wide range of preparations and ask that you take them with you and give them a fair trial, and place them in competition with preparations made by the pharmaceutical houses, though there may be no objection to their being made by the better classes of the pharmaceutical houses.

We wish to impress you with confidence in our ability to make these preparations, or if you should not find just what you want, that we could be able to compound for you such formulas as you may wish to get up, or if any of the ready-made formulas do not represent the amount on any one drug wanted, we could make it to suit your particular case.

The great objection to most of the ready-made formulas that contain our most potent remedies is that they are not in sufficient quantities to be of much service. Take strychnine and confine it to the preparations that are found on the market and it is almost useless; the same may be said of codein, heroin, arsenic, etc. Take compound syrup of hypophosphites and the lime and soda are the only things in it that are in quantity sufficient

to be of any service. If you give medicine in homeopathic doses, you may expect homeopathic results.

If you will use these preparations and make them conform to the requirements of your particular patient we are confident that it will be better for all parties—the physician, the patient, and the druggist. The physician will come nearer getting what he wants and the patient will get better treatment and for less money, and the druggist would be something more than a vendor of patent medicine. If at any time you should want to make any formula and should be in doubt as to what would make good mixtures, you could consult the latest editions of the works on pharmacy that could be found in any well-regulated drug store, or the prescriptionist would take pleasure in making for you a small amount to see if it was practicable.

Allow me to assure you of our appreciation and thank you for your courtesy, and we give you a cordial invitation to our association.

DISCUSSION ON THE PAPER OF MR. SHAPARD.

MR. D. H. NEIL, of Nashville, was asked to open the discussion. He said:

Mr. President and Members of the Tennessee State Medical Association: As I have just entered the hall and did not hear the reading of Mr. Shapard's paper I do not know just what he has placed before you. As I understand it, I am to discuss the advantages and disadvantages of prescribing U. S. P. and N. F. preparations. I have never been a very strong advocate of but one standard work, believing that if we could give it full consideration we would have as much as we could do. As you all know, it is the work of both medicine and pharmacy, and offers a common ground upon which all can meet and feel at home.

However, that is not the point for discussion. The greatest disadvantage that you seem to

*Representing the Tennessee Pharmaceutical Association.

meet is the serious charge that a large number of the druggists are incapable and poorly fitted in a laboratory way to manufacture these preparations. At one time this was generally true, but I feel safe in saying that the number of unqualified druggists is fast being reduced and that you will have little or no trouble in finding these preparations in most any store, and the ones who are poorly qualified can and will be glad to purchase and keep in stock such as you desire to prescribe. This point has heretofore been one well taken and has worked a great hardship both on the better druggist as well as the physician.

On the other hand, to illustrate, say you prescribe 4 oz. of a proprietary preparation, which would be one-half of the original bottle. The prescription would be filled and a reasonable proportional price charged for it. More than likely the remainder of the bottle would remain on the shelf for six months or more, and when we received a prescription for it again, if we were honest with you, the patient, and ourselves, we would throw away what had been left and open a new bottle, as we would not know whether it was inert or not.

The patient, in most cases, will ask: "Aren't you a little high on that?"

We sometimes say "Yes" and explain why. Then the customer insists on purchasing a whole bottle of it, and when it runs out they return for the second one, and so on. They are no longer your patient, but a customer of the proprietary man who has made good by using you and me to push his goods. In addition to using it, they recommend it to all of their good friends as your prescription and they call and purchase a bottle. I believe that the medical profession could do nothing that would work for greater good than to have a law passed to prevent the refilling of prescriptions without the physician's consent.

I have looked for and hoped for the day when every physician would realize that he was being imposed upon by the dealer of nostrums, who must assume first that you are either too busy, ignorant, or lazy to write a prescription. If this be the case and the druggists are all too ignorant to compound what you would write, then the field for the manufacturing of U. S. P. and N. F. preparations is large and the profits reasonable. I ask why does he not manufacture and detail you on them? There is but one reason: he knows that what he says is not true. The facts are these: he is not willing to put up an honest preparation for an honest price.

and hence he continues to try and most always does bunco the young, inexperienced physician into writing for his wonderful cure-all. I, for one in this State, intend to see to it that counter prescribing is less practiced and that the best interest of your profession is guarded with care.

DR. W. H. WITT, of Nashville:

I feel as though the medical profession has hardly met the pharmacist half way in regard to this matter of clearing ourselves of the charge of so much proprietary prescribing. They have tried for a year or more through the organization they have in this State to put before us the work of the American Medical Association along the line of trying to get us to stick to the U. S. P. and N. F. preparations and eliminate other things from our prescriptions. I feel that the great majority of us have been negligent in our attention to the literature they have sent us. They have assumed a right attitude toward the medical profession.

I simply want to express what we all feel—namely, that we appreciate what they have done, and I think, moreover, it would be a good idea if every year there should be on our programme a paper either by a physician or by a pharmacist on this very topic, or something akin to it.

MR. SHAPARD (closing the discussion):

I would like to say that Mr. Neil has made a talk not against the U. S. P. and N. F. preparations, but against proprietary preparations, which suits me exactly. The N. F. preparations are what we are trying to make and are trying to get the medical profession to use them in place of the proprietary remedies. He spoke of the proprietaries all the time, and what he had used at one time. I understood him to say that he did not see any use for the U. S. P. and the National Formulary preparations, or both. They are not the same preparations at all. Some of them may be duplicates, but the most of them are not, and the N. F. preparations will give you a wider range and give you nearer what a great many of you seem to want. When you prescribe these proprietary medicines you do not know what is in them. That is what we are trying to avoid. We want to try and prevent the representatives of some sharp pharmaceutical house from going around and inducing you to prescribe something of which they do not give you the formula. I do not think Mr. Neil has made any argument at all against the N. F. preparations.

CANCER OF THE STOMACH; PYLORECTOMY.

BENJAMIN B. CATES, M.D., KNOXVILLE.

Report of Case.

IN presenting this paper for consideration to the Tennessee Medical Association it is not my purpose to show anything new in regard to treatment, or to elaborate as to the theories presented by the different schools as to the cause of cancer of the stomach.

Suffice it to say, no known therapeutic agent has ever cured cancer of the stomach, and that all, or nearly all, cancers of the stomach show a pre-cancerous history of derangement of the stomach at some period of the patient's life.

Since, then, this being so, it is reasonable to assume that cancer of the stomach is strictly a surgical disease.

It is by a knowledge of these things and a proper presentation of the subject to our patients that we may hope to prevent that which we cannot cure.

It is relatively only a few years since the world awoke to the evil effects of delayed operation for appendicitis, and the many good results following operation for this condition, that today it is rare to find a victim of this malady who dreads surgical measures for his relief.

In like manner, by agitation may we hope to stimulate the profession to educate the public to the danger of delay and the good results following operation in stomach diseases.

In such circumstances I hold that a patient who has for any length of time suffered from stomach trouble, the symptomatology of which points to catarrh or ulcer, and which after a reasonable lapse of time does not yield to therapeutic measures, should be recommended for surgical treatment.

The only apology I have to offer in presenting this case is to substantiate in a

measure my preliminary remarks, in that this patient showed a long pre-cancerous period of stomach trouble; and, had he hearkened to the advice of his family physician when first told he had cancer of the stomach, would, perhaps, have lessened the dangers of operation and increased the chances of prolonging his life, by removing the sore before extensive infection of the lymphatic system had taken place.

The report in brief is a history of a patient of Dr. S. B. Hall, of Clinton, Tenn., who was referred for special examination to Dr. Chas. P. McNabb, of Knoxville, Tenn., who in turn referred him to me for operation.

The report of Dr. McNabb is also appended; likewise the report of Prof. A. J. Smith, pathologist in the medical department of the University of Pennsylvania.

John Moss Coward, of Clinton, Tenn.; male; farmer by occupation; aged 51.

Family History: Father died of consumption at 51; mother, aged 76, living and in good health; one brother died in childhood; one sister, aged 40, living and in good health.

Personal History: Always a hard-working man; temperate and irregular at meals; eighteen years ago began having sick spells a short time before meals (occasionally would vomit a slimy fluid, which would always relieve him), which would be relieved on eating. These spells became more frequent and more severe; finally would come on at night—near midnight.

In December, 1907, on account of pain in the stomach after eating, he consulted Dr. S. B. Hall of Clinton, Tenn.; two or three times a week he would vomit an hour or so after meals; the vomitus looked like the white of an egg. From that time on he declined in health, losing flesh and strength. In November, 1908, he again consulted Dr. Hall, who told him he had cancer of the stomach. Two or three days after he saw Dr. Hall he had a severe vomiting spell, the vomitus consisting of partially digested food, and the quantity seemed to be what he

had eaten for several days. He was then easy for a short time. In two or three weeks he again had a vomiting spell of a large amount of undigested and retained food. He had four attacks like this at intervals of two or three weeks between November, 1908, and the time of his operation, February 11, 1909. February 11, 1909, I did a posterior gastro-enterostomy (no loop) with sutures, and pylorotomy by the Mayo or Billroth's No. 2 method. He recovered from the operation and went home in four weeks, gaining in flesh and strength every day eating anything he wants.

I was assisted in this operation by Dr. J. H. Morton, of Knoxville, and Dr. Harry Feagles, of Seattle, Wash.

DR. M'NABB'S REPORT.

J. M. C., farmer, aged 51; examined January 27, 1909; height, 5 feet 11 inches; weight, 135; emaciated and skin pale; pulse, 95; tension, low; temperature, 98.4; tongue coated with heavy grayish fur; breath fetid; teeth in poor condition; heart, arteries, and veins negative; lungs, pleura, and other organs of respiration normal; urine, negative; blood examined by hematokrit: red cells, 3,400,000; white cells, 7,000; differential count not made; hemoglobin, 60.

Inspection and palpation of abdomen showed a hard, nodular tumor in pyloric region, which was movable to some extent. Peristaltic waves from left to right were visible and showed outlines of stomach with descent and dilatation.

Gastric analysis showed dilatation and motor insufficiency and absence of free hydrochloric acid and decided lactic acid reaction. Boas-Oppler bacillus not observed.

Examination for "occult blood"—negative.

Examination of bowels, rectum, and anus—negative.

Fecal analysis not made.

Diagnosis: Schirrus carcinoma of pylorus and lesser curvature. Referred to Dr. B. B. Cates for operation.

PROF. SMITH'S REPORT.

No. 2514.

A specimen received from Dr. Benj. B. Cates, 508 West Clinch Avenue, Knoxville, Tenn.

Source—operation.

Name and address of patient—John Moss Coward.

Clinic data—cancer of stomach; pylorotomy.

Operation—February, 1909. The patient got well and is gaining flesh and strength every day.

Has been examined in this laboratory and presents the subjoined features:

Diagnosis: Adeno carcinoma of stomach with metastases of the lymph nodes of the greater and lesser curvature.

Gross and Minute Appearances.—Specimen consists of lower end of the stomach, removed by operative procedure. The segment of the stomach, including pylorus is 11 cm. in length; the transverse diameter of the upper portion measuring 7 cm., the wall at this point being but 6 mm. thick and the mucosa showing here a mosaic like appearance of hypertrophy of the epithelium and shows but few rugae. The tumor mass begins 3 cm. from the line of incision and rapidly swells up so as to apparently completely obliterate the lumen of the organ. The mass as it reached this laboratory in formalin shows a rough, apparently ulcerated, dirty gray granular surface. The intestinal end of this specimen is 3 cm. in transverse diameter and shows a markedly thickened mucosa; the peritoneal surface shows the tabs of numerous adhesions and about the greater curvature the adherence of a moderate number of distinctly enlarged lymph nodes. Consistence of the entire substance is firm, possibly as a result of the preservation.

Sections for microscopic study made from stomach and two lymph nodes.

Section of stomach shows none of original cellular arrangement of a normal stomach, the tissue being made up of a mass of connective tissue, the fibrillae of which are fairly widely separated by a moderate amount of oedema. This connective tissue is poor in nuclei, but richly infiltrated with lymphocytes and plasma cells. Supported by this connective tissue recticulum is an irregular mass of epithelial cells arranged for the most part as irregular acini, which show the epithelial lining made up in some parts of a single layer of columnar epithelial cells, but more often by several layers of epithelial cells which are generally oval and columnar type. In part these acini are fairly well defined within a basement membrane, but in numberless instances perforation of the basement membrane has taken place and the growth has taken the form of an epithelioma, with the formation of irregular areas of epithelial cells devoid of any semblance of the acini arrangement are to be found. The lumina of the acini show granular detritus made up largely of fragmented nuclei, chromatin and to a certain extent a pink-stained material, and in a few cases of finely granular blood-stained mucinous material. The cells throughout show evidence

of active proliferation, karyokinetic figures being frequent. A few fuchsin bodies are also noted. The tumor is but poorly vascularized and shows only a few vessels here and there in the section.

Section of lymph nodes, one from the lesser curvature, the other from the greater curvature of the stomach.

They both show essentially the same arrangement, there is a thickened, fibrous capsule, which has undergone hyaline transformation and shows a few nuclei, but is moderately richly infiltrated with lymphocytes and plasma cells. The lymphocytic elements of the nodes have been almost completely replaced by an irregular

acinous epithelial formation similar to that described in the stomach wall, but somewhat richer in connective tissue. Here and there a few islands of lymphoid tissue are to be found showing an arrangement so loose as to be suggestive rather of lymphoid pulp than of follicles or of germinal centers. These are not sharply outlined and are encroached upon by a glandular proliferation. Karyokinetic figures are not so common in these metastases as in the primary growth.

A second section of lymph node is like the first, except that a few more lymphoid cells remain in the body of the node than in the other section.

ECZEMA OF INFANCY AND CHILDHOOD.*

JOHN CLEAR, M.D., CLINTON.

THIS is one of the most common skin diseases found in infants and young children, and the physician who does a general practice will find that a large per cent of the skin diseases he meets are eczema in some of its various forms. We shall not attempt in this paper to discuss or describe the various forms of eczema met with in general practice; but confine it to that form most generally found in children.

We generally find a child with one or more sores on face, neck, or head, which have been there for some time, and the mother will tell you that the child is fretful and wants to scratch the eruption, and that she is anxious for something to relieve it.

Etiology.—Eczema stands first in frequency among skin diseases for which advice is sought, especially in children. It is met with in both sexes and at all ages, although it is probably least observed between the ages of six and fifteen years. Eczema can scarcely be said to be hereditary, for such evidence is lacking in a large proportion of cases. In many patients, however, there is an inherited tendency, but this alone probably is never responsible, but such individuals, if subjected to other contributory and exciting

factors, will often develop the disease. Doubtless it would be more correct to state that some individuals are born with an irritable and easily excited skin, and, therefore, this organ is readily susceptible to internal and external pathogenetic stimulants or excitants. It is a well-known fact that certain external irritants will provoke a dermatitis in a large number of those exposed, whereas in most of these it will be simply a passing dermatitis; in others—usually a small majority—it turns out to be a true persistent eczema.

The possibility of contagiousness is a question that is not settled positively, yet I think that in the sense of one person or child contracting the disease from another, that is very improbable; but that the patient may carry the disease from one part of the body to another is possible and is often done.

Causes.—The causes are varied and numerous, and we cannot go into them at length. The most prominent causes are systemic—such as indigestion, diseases of the kidney, rheumatism, teething, etc. Anything that tends to lower the vitality and impoverish the blood may cause eczema. It may in some instances be caused by some external irritant or poi-

* Read by title.

son; and I believe that in some instances eczema is caused by the dye in the clothing.

Symptoms—Eczema Rubrum.—This is the most frequent form of eczema occurring in infants and young children, and is usually seen upon the face. It appears by preference upon the cheeks, forehead, and scalp, not infrequently the ears and neck, and may occur upon any part of the body. Upon the trunk and extremities the eruption is usually in patches, but in rare cases may cover nearly the entire body. The disease generally begins upon the cheeks with the formation of small red pustules; later these coalesce, and there is a moist, red surface, exuding serum or sero-pus. The secretion dries and forms thick, gummy crusts, which may be so hard as to form a mask for the face or head. From the scratching caused by the almost intolerable itching, the surface bleeds freely, and the dried blood gives to the crust a dirty, brown color and adds to the distressing appearance. The skin is often much swollen. After the removal of the crusts there is seen in acute cases a red, inflamed granular surface, discharging pus or serum and bleeding freely. From the cheeks the disease spreads to the forehead, ears, and scalp, and here similar lesions are seen. Upon the trunk and extremities thick crust rarely forms, but the skin is red, thick, and scaly. The parts most often affected aside from the face and head are the forearms, chest, elbows, knees, abdomen, and back.

The predisposition to eczema often ceases with the second year. This is in part due to the loss of fat, more exercise, and change of diet.

Diagnosis.—The diagnosis of eczema need not be difficult if the usual features—redness, thickening, or infiltration of variable degrees, the often mixed character of the eruption, scaling and crusting, or

in many cases fluid exudations of a sticky nature, the tendency to be confluent and to form areas together with the subjective symptom, itching and the not uncommon disposition to fissuring—are kept in mind. Add to this picture a more or less chronic course and the location of the eruption—the face, head, neck, and ears, with occasionally an eruption on the hands, arms and legs—and your diagnosis should be made. Combining these diagnostic factors—symptoms, region, chronicity, and frequency—one is then prepared to say that in children under the age of four or five, an itchy, inflammatory eruption of the face or scalp of any duration is usually an eczema. It is not necessary to take further time on this subject of diagnosis, for it would go beyond the limit of this paper.

Prognosis.—The prognosis is generally good; there are some cases that recur, but can be easily controlled and the patient will soon be in a healthy condition.

Treatment.—The treatment is both constitutional and local. The general state of the health should receive attention; if there is indigestion, this should receive proper treatment. In the beginning of the treatment of eczema give calomel and soda to clean out the stomach and bowels and keep this up as indicated. As a constitutional or alterative treatment, Fowler's solution and syrup of the iodide of iron three times a day. Locally, cleanliness, keeping the parts well cleansed with sterile water and a medicated soap, or, better still, with peroxide of hydrogen and an ointment of salicylic acid and carbolyzed vaseline. I believe that these cases should have as little water as possible, so that they are kept clean. It will be best to use water only one time a day, and if there is much pus or serum, use peroxide. In the weeping cases, it might be best to use a powder of boric acid and oxide of zinc.

EPISCLERITIS, TREATMENT.*

GEO. H. PRICE, M.D., NASHVILLE.



INFLAMMATIONS of the sclera are not common, except, perhaps, the milder forms, which are quite transitory and almost self-limiting in their character.

Such forms are easily relieved by correcting the cause, either local or constitutional, with rest of the eye for a time; but in that form in which the inflammatory process is well marked by a nodule, with deep injection of the tissues, more or less discoloration, great pain, photophobia, and irritation of the iris leading to iritis; in fact, bordering on a real scleritis, we have a more serious and obstinate condition to deal with.

While the prognosis is favorable, in the main, in the simpler forms, in the more serious, complications may result which should cause us to be guarded in our statements to the patient as to duration and consequences.

The constitutional treatment is generally based upon the presumption that rheumatism or gout are the most common causes, though menstrual disorders, tuberculosis, syphilis, digestive disorders, exposure to cold, and even slight injuries may induce it. Internally, then, we would give the salicylates, potassium iodide, or such alterative and constructive treatment as the cause in any given case would demand. The local treatment is the special feature of this subject to which I desire to call attention.

For the pain, especially if the iris is involved, atropia should be used, of sufficient strength to open the pupil and keep it open.

Hot applications applied several times daily, especially when pain is greatest, are very soothing to the patient and helpful. If seen quite early we may use the

adrenalin 1-10000, to constrict the capillaries, and to this add one-half of one per cent of alypin to allay the pain. In this stage, if there is no irritation of iris, we could use eserine sulph. one-quarter grain to the ounce, but it is a two-edged sword and must be guarded; hence I have not used it of late. Many other local remedies—such as dionin, the yellow oxide of mercury in the late stages, the use of the actual cautery and scarification—have been recommended and used with more or less success.

After having tried the usual local remedies with varying success as to duration of this disease, the usual course of which is from four to eight weeks, as given by most writers upon this subject, I was led to try another line of local treatment in the hope of hastening the cure or relief.

Going upon the presumption that chronicity was a feature of this condition and believing if we could get sufficient stimulation directly at the inflamed area, we could induce a more rapid return to the normal, I concluded to try tentatively the use of iodine in some form, so I resorted to the use of tincture of iodine and tincture of aconite, equal parts, applied directly to the nodule. This was suggested to my mind by reason of the fact that our professional friends, the dentists, have found this a most efficient application in the relief of inflammations about the teeth. The method of procedure in the use of this remedy must be such as to prevent, as far as possible, the solution from reaching only the desired area; hence, after local anæsthesia, the surface of the nodule was dried with a dry cotton mop upon a stick toothpick, and then with a very small cotton mop previously saturated with the solution of tincture of iodine and tincture of aconite, equal parts, I painted the nodule, and

*Read before the Southern Medical Society, Atlanta, Ga., November, 1908.

held the lids open until the surface was practically dry. It is essential that you use a small mop and not too full of the solution, to prevent its spreading too freely, and as a further precaution I have the drying mop at hand, and if the solution seems to spread too freely by reason of a too moist surface or too much solution applied, I dry it about the margin of the painted spot, especially below. This application is made only once a day, or every other day, according to indications. The first time this application is made, the pain, shortly after, is sometimes quite pronounced for a time, even though we may have had good local anæsthesia during the application, and the injection of the eye is temporarily increased. These immediate symptoms are all gone by the next time we see the patient.

For the treatment during the interim between visits, which are daily or every other day for a time, the patient is given a soothing lotion with or without atropia, to be used several times daily, as the case may demand, and some bland ointment to be used in the eye at night—such as euphron one-half to one grain, to vaseline 3. In conjunction with this line of treatment I have also found pronuclein special a most satisfactory and powerful adjunct in the management of this condition; in fact, it is quite as useful as the former in many instances, and if the aconite-iodine solution is a little too active or painful, we can use the pronuclein alone for a time, or even in some cases altogether. In fact, in some of the mild cases this remedy will give the most satisfactory and prompt results.

The use of this as of the former remedy, requires local anæsthesia, since if put into the eye or directly upon the ocular conjunctiva it causes great pain, which persists until the powder is brought into solution and even after that. Hence I use cocaine or alypin to combat the pain, and

after anæsthesia I take a little of the powder upon a small spatula, made from a common stick toothpick, and apply it directly to the inflamed area and then lift the upper lid from the globe and lower it over the adhering mass of powder. The immediate effect is painful to a slight degree, complained of more at the first application, attended by considerable injection, which persists for some time.

In my opinion, one application daily is enough. I find that a combination of these lines of treatment is especially beneficial in very pronounced cases, which border closely upon a real scleritis; hence I sometimes use the aconite-iodine application in the morning and the pronuclein special in the afternoon until the condition shows improvement. If there is too much reaction following the double daily use, I suspend one or the other, and alternate them daily, or continue the one which seemingly has the most desirable effect.

With this line of treatment, those cases which have come under my care for the last five or six years have usually terminated in a most satisfactory way in about two weeks—some in less, some in a little longer time—except one recently treated, which was well developed when first seen and complicated by marked iritis and a most pronounced inflammation passing the border line of episcleritis; in fact, well toward scleritis proper. This last case is now under treatment, and followed, so reported, a cinder in the eye of a locomotive fireman, who made several trips after the injury, being subjected in the meantime to excessive heat, light, and cold. He is rheumatic, and this may be the chief underlying cause in this case.

Since adopting this line of treatment I have not been compelled to resort to the actual cautery, as first suggested, I believe, by Dr. Webster, of New York, nor to scarification or excision.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

PELLAGRA.

It seems that we are confronted with a new disease in Tennessee which demands our most thoughtful consideration. We say, new disease in Tennessee, for it is only within the past year or two that our attention has been called to it, as being in our midst, while in fact the disease is one of long standing in other countries. While it is true that sporadic cases have been observed in America since 1863 or 1864, they were so rare, or so rarely diagnosed, that the present agitation of the question puts it in the attitude of something new; then, too, as so little is really known of its true nature and origin, we may regard it as a really new condition as it relates to Tennessee.

Since 1902 it has been reported in Georgia, South Carolina, North Carolina, Alabama, Arkansas, Tennessee, Texas, Illinois, Pennsylvania, New York, and other States throughout the Union to the number of thirteen in all.

The probabilities are that it has existed for some years in the South, but was not recognized as such until recently, being regarded merely as some form of skin trouble, chronic in character.

Its appearance in Tennessee has caused considerable concern to the public health authorities and has been the subject of much discussion in the secular press. While those of widest experience have been holding to the opinion that it was not communicable, yet the evidence in

the case as it applies to its appearance in Tennessee seems to indicate that it may be.

Those who have previously reported pellagra, and had opportunity to study the condition, have been impressed with the idea that it was due to eating of corn-meal, the product of diseased corn, as the disease appeared in Europe along with or following close upon the importation of corn or corn products.

It is defined as "an endemic trophoneurotic skin disease occurring among the squalid and destitute, due to chronic poisoning with diseased or fermented maize, and affecting chiefly the cerebro-spinal and digestive systems. It always begins in the spring, and the lesions appear on the parts of the body exposed to the air and light (face, neck, back of hands, and feet)."

Our State Board of Health, after a thorough consideration of the cases under observation near Nashville, which cases were investigated both as to history and present condition, came to the conclusion that it would be wise to guard the public health by a timely warning, hence they adopted the following, which was offered by President Jones:

"WHEREAS, The ethnology and pathology of the disease known as pellagra are obscure and the nature of the disease is not well understood, and while the weight of authority in the past favored the idea that the disease is not communicable, still, in view of these facts, the history of the present cases in the United States, and

especially those of Tennessee, give evidence that the disease is communicable; therefore,

"Be it resolved, That with the light before us, the board feels justified in the opinion that the public welfare demands that the disease be treated as a communicable disease, and hereby orders the isolation of all cases now existing, or which may in the future exist, in this State."

There has been issued a call for a conference on the pellagra situation, to be held in Columbia, S. C., November 4th and 5th. The public health authorities of the Southern States are especially interested in this matter and doubtless will be present. It is hoped that all those who can will take advantage of this opportunity to learn all possible of this new public health problem, and give such help as they can to those who will formulate plans for the care of these patients and protection of the public.

DISTRICT COUNCILORS.

WE desire to call upon the District Councilors, and through them the various County Societies in their districts, to the end that each county now having a County Organization may be represented in the JOURNAL by a report of the work done in the individual County Society. In some districts there are yet counties in which there are no County Societies and we wish to urge each Councilor to look over his district and take up the question of county organization in each unorganized county. Of the ninety-six counties in the State but 60 per cent of them are organized. The division of the State into districts and appointing of Councilors was designed to overcome this condition and the time is ripe and the need is urgent for action on the part of the Councilors. We sent a special letter some time ago, to each Councilor calling his attention to the Counties in his district which were organized and those which were unorganized and requested him to make a special effort in his particular district, and the presumption is that

this work was undertaken but we have failed to receive specific reports from the Councilors. We again call attention to this and urge each Councilor to take the matter up at once.

Reports from Councilors of County Organizations for their districts will stimulate others and we hope that in the next issue of the JOURNAL, we will be able to record material progress in this most important work.

SOUTHERN MEDICAL ASSOCIATION.

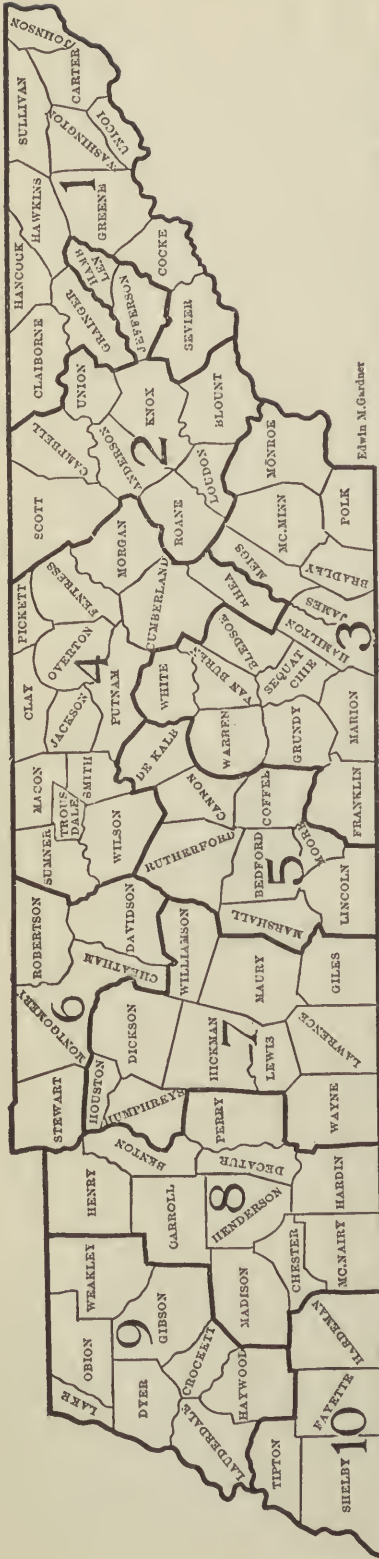
THIS Association holds its next annual meeting in the city of New Orleans, November 9th, 10th and 11th. Tickets will be on sale in the various towns of Tennessee on the 7th and 8th of November. Special rates will be given of one and one-third fare, good until the 15th of November. It is hoped that Tennessee will be largely represented at this meeting, as the President of this Association is a prominent member of the Tennessee Association—namely, Dr. G. C. Savage. There are three sections of this Association: Medical, Surgical, and Ophthalmological. The Southern Medical Association is a branch of the American Medical Association and is designed to give those who cannot attend the American Medical an opportunity to meet and discuss questions of interstate interest as well as those of national scope. The last meeting, in Atlanta, was a most successful one and the indications point to a large meeting and much enthusiasm when the Association convenes in New Orleans. The profession of the city of New Orleans is fully alive to the interests of the occasion and the visiting members of the Association will be entertained as only New Orleans can entertain them. The Tennessee delegation has always been an important factor in this Association, and this meeting should be of pronounced interest to every member.

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

No. 7

SUBSCRIPTION PRICE \$2.00 PER YEAR

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greenville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSON COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. MCKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EYE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. McREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Moshelm.
Secretary, S. W. WOODYARD, M.D.....Greeneville.

HAMBLETON COUNTY.

President, W. B. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D.....Whitleyville.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. McNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewelsburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

MORGAN COUNTY.

President, ———
Secretary, G. R. TODD, M.D.Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, K. E. ROGERS, M.D.....Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, Dr. L. S. TILSON.....Erwin.
 Secretary, Dr. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmersville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization which goes to make up the State Association. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County

Organizations. The By-Laws of especial interest to County Secretaries will be found in the Transactions of 1907, page 373, Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., NOVEMBER, 1909

No. 7

CONGENITAL CALCULUS IN PROSTATIC AND MEMBRANOUS URETHRA OF A SEVEN-YEAR-OLD BOY.

WM. D. SUMPTER, M.D., NASHVILLE.



At the hour of midnight, October 13, 1908, I was at the bedside of a seven-year-old boy, whose suffering seemed unendurable. His mother gave his history, viz.: Had had colic from the day of his birth, and since four months of age had been directly under successive medical attention, my service being the completion of a baker's dozen of physicians whom she had consulted. Undetermined colic had been the general diagnosis. Enquiry as to the functions of the child's bladder elicited the information that he had never passed his urine in a stream, that day and night since his birth he had voided in dribbles small quantities, always with fretting or crying, sometimes agonizing. Had never slept without waking several times during the night. These symptoms suggested impacted stone in the bladder, and on the following morning, under chloroform anæsthesia, I found by rectal examination a hard mass in the prostatic region, and by the passage of a small urethral sound, a long silver probe being so bent, the presence of a calculus was quickly determined.

Urotropine was administered four times a day to render the pus-laden urine as aseptic as possible; tonics were administered. On October 28, 1908, by median lithotomy incision into the urethra two

stones were found in the membranous and prostatic portions, the smaller being anterior and superior in position as it rested by facet upon the larger. The larger calculus, herewith exhibited, has dimensions as follows: Length, $1\frac{1}{4}$ inches; breadth, $\frac{7}{8}$ of an inch; thickness, $\frac{5}{8}$ of an inch. Its dry weight is 148 grains. The smaller calculus I have misplaced, but its relative dimensions are indicated by facet on its fellow. The cystic end of the larger stone formed an almost perfect valve to the outlet of the bladder, which orifice was three-eighths of an inch in size, and by slight dilation allowed the introduction of the little finger into the bladder for exploration.

Drainage by the usual technique of perineal lithotomy was followed and the boy made an uneventful recovery. He slept much of the night succeeding operation, and has had undisturbed slumber since that time. He was soon able to urinate with normal stream, and has, since December 15, 1908, when perineal incision was healed, had no inconvenience whatever.

The history of the case, the size of the larger calculus removed suggest congenital calculus of the urethra, a rare though authenticated occurrence. It is possible, of course, that a urethral calculus may

have been formed primarily in the bladder and passing into the urethra lodged in the urethra's narrow prostatic and membranous portions, an unusual situation, the meatus urinarius, the other constricted portion being the more common location of urethral calculi. The paucity of literature on the subject, and the omission of the subject from text-books, is corroborative of its infrequency.

Bernhard, in 1695, reported that he removed two stones from the meatus urinarius after twenty years' duration.

Block, in 1844, recorded one for twenty-eight years present.

Walton, in 1862, mentioned a urethral calculus, whose size increased for fifty years.

Ashburn, in 1895, reported probably the largest stone ever removed from the urethra, its dimensions being $2\frac{1}{2} \times 1\frac{1}{4}$ inches; dry weight, 660 grains. A smaller stone resting on faceted surface was present, its weight being 60 grains.

To discuss the dilatibility of the child's urethra by a slow growth of a calculus, to consider the often concurrent complications of rupture, sloughing, extravasation of urine, gangrene, etc., the long retention of stone with few or practically no symptoms, the special history of the case before you, is not the chief purport of this report.

Some years ago I reported an undiagnosed calculus of the bladder in a boy baby of twenty-two months of age. The mother had been advised to give the child opiates that it might be afforded euthanasia, a course too often followed where no diagnosis is made. I found the stone as easily as the one under discussion, removed same by the suprapubic method. The calculus of 96 grains dry weight I again submit. The boy is now nearly fourteen years of age, and has had no evidence of any inconvenience since operation.

These cases are reported as a plea for a

more careful examination of the bladder and urethra in any case suggesting calculus or disturbance of function of the bladder. Rectal examination, bi-manual, in a child will in every instance, under an anæsthetic, easily reveal a stone of any definite size, and a sound carefully and patiently manipulated should corroborate its presence. In every case of frequent urination microscopical examination of the urine should be made. Such methods lead to diagnosis and results.

DISCUSSION OF THE PAPER OF DR. SUMPTER.

DR. W. A. BRYAN, of Nashville:

Mr. President: The case Dr. Sumpter has reported is very interesting indeed. So far as my knowledge goes, it is almost unique that a patient should develop a stone in the urethra. In all probability, the vast majority of these stones form in the kidney, pass down the ureter to the bladder, and to the urethra, where they lodge. That is the habit of urethral stones in cases that come for operation, and it is possible in Dr. Sumpter's case the stone was formed in the bladder and passed into the urethra, and lodged there. But, it seems to me, whether the stone was formed in the bladder and passed into the urethra, or formed primarily in the urethra, the fact that the stone was allowed to remain in the bladder or urethra for seven years and cause symptoms is the point that is of interest to the man who is looking for practical things. If some one had thought of it sooner, the child could have been relieved of a good deal of suffering. A man gets scared to death if he has a stone, but a child cries and never knows it has a stone; in fact, the child may never know any other but that the urine is passing in a normal way. This child went on and did not know there was anything the matter except suffering. I think the practical lesson for us to get in a case of this kind is to think of stone, and if we investigate, we may easily find out what the cause of the trouble is or was, and then of course there is but one thing to do, and that is to remove the stone.

DR. RICHARD A. BARR, of Nashville:

Dr. Sumpter is to be congratulated on having found such an interesting case of such an unusual character, and its recital is of prac-

tical value to us in one respect. Dr. Sumpter reported another case that emphasizes the point—namely, in his first operation, I believe he did a suprapubic cystotomy, the child being thirteen months old. In this case, however, he did a perineal operation, I suppose, because he knew the stone was located in the urethra. In cases of stone in the urinary bladder in children at any age, I prefer the suprapubic incision. I do not believe that the neck of the bladder and posterior urethra in male children should be subjected to the traumatism necessary for the removal of the stone by that route. In this instance it was essential to make a perineal operation, and the doctor's diagnosis was especially important in that regard, because I have no doubt if he thought the stone was in the bladder he would have made a suprapubic incision and resorted to a perineal operation later. I know of one case of perineal lithotomy on a child which has been followed for a number of years by incontinence of urine. Quite a large stone was removed from a boy, seven or eight years of age, through a perineal incision with such injury to the neck of the bladder that the boy cannot retain his urine. These stones can be best removed in males by the suprapubic route.

Dr. SUMPTER (closing the discussion):

The question was brought up by Dr. Bryan as to this calculus being congenital. I can readily see grounds for incredulity that such might be the case, and I myself am not prepared to testify that the stone was there from birth. Notwithstanding Von Bergmann's System of Surgery reports instances in which children at birth have been found with stones in their urethrae, it does not state whether they were operated *post-mortem*, or whether the children had obstruction and the stones had to be removed. But it is stated positively that congenital stones do occur in the urethra, although it is a hard thing to believe. Unquestionably, in some of these cases the stone passes from the bladder into the urethra, and we have seen children with stones plugging up the meatus

urinarius. I have a couple of stones that blocked up the end of the penis. The diagnosis had not been made in this child at all, yet I do not take any credit for having made the diagnosis. Any man can introduce his index finger into the rectum of a baby, with the other hand over the suprapubic region, and feel a stone in the baby's bladder, if it is there, without an anæsthetic, but it is safer to use an anæsthetic. It does not hurt very much to introduce the index finger into the rectum of a child to see if there is a stone in the bladder or urethra that is giving trouble. There is frequent urination in these cases, and wetting of the bed in conjunction with it. This child at the age of four months was taken to physicians. One of them was a quack, but the others were reputable men. They knew how to remove the stone; but they did not take the trouble to run the index finger or sound into the rectum to determine whether a stone was present or not.

In regard to the remarks made by Dr. Barr, the suprapubic method in children anatomically is the method, in my opinion, by which to go into the bladder. A big, well-developed, stout, long-used bladder will stand an incision through the prostate; it will stand a median or lateral lithotomy incision, but in a small bladder, when you go into it and take out a stone, you are destroying more tissue than in the case of an adult, and I heartily thank Dr. Barr for mentioning it. This child has had no further trouble since the operation. The main point of my paper is in the report of this case, because there is nothing wonderful about the diagnosis or the operation. The only question is, Do we not forget that genius is the capacity to take pains? and any of us without that genius, if we will take more pains, will get better results. When a child has symptoms suggestive of stone in the bladder, one can easily put a little soap on the index finger and introduce the finger into the child's rectum, feel the bladder, or pass a sound, and, if he does not find a stone, his conscience is temporarily eased until some other fellow finds it. (Laughter.)

SMALLPOX IN SHELBY COUNTY.

N. F. RAINES, M.D., RAINES.

TO one who has seen very little smallpox or none, the subject may be trite and the diagnosis seem easy. To one who is confronted daily with the real thing its management becomes a problem. Situated as we are in Shelby County, in the corner of three States, the mighty Mississippi River at our feet, and railroads too numerous to mention connecting us with the whole world, it is not strange that we have an epidemic of large proportions to deal with.

The rousters from up and down the river, the tramps who follow the railroads, the laborers on the public works, the logging camps of three States, the government fleet below Memphis, the stragglers from Mississippi and Arkansas, the undesirable citizens from these States who come for treatment, the unkempt of the big city, the unwashed from the slums, and the unvaccinated from everywhere, all contribute their quota to the sum total of our Emergency Hospital. Like the poor, they are always with us, and the question is, "What are we going to do about it?"

We must either quarantine the patient and his "contacts," or send the patient to the hospital and vaccinate all those with whom he has come in contact. Sounds easy, doesn't it? Did you ever try it?

The typical case presents the initial chill, fever, backache, headache, sore throat, and the third day an eruption, papular, vesicular, pustular, and then a crust.

Possibly it is atypical. Many call it smallpox. Some chicken pox. Still others impetigo contagiosa. The white laity regard it as a new and strange disease, while the colored laity pronounce it "Cuban" itch. A doctor told me recently

that anyone could tell the difference between smallpox and chicken pox. I asked him how. "Why," said he, all you have to do is just to wait; if it is chicken pox it will disappear, and if it is smallpox it will not."

But, gentlemen, how can you wait when the telephone bell is ringing like an alarm clock, and the office girl beating a tattoo on the door of your private office? You go out five, ten, fifteen, twenty miles to see a suspect. The neighbors are hysterical and invariably frightened in inverse ratio to the danger. They tell you if you don't take him away that they will, once and forever. They demand a diagnosis right now.

You run your hand over the skin for the "shotty" feel, you look at the palate and roof of the mouth for the small red spots, you try to break the papulus or the vesicles by rubbing your finger hard over them, you look in the palm of the hand and at the soles of the feet for the deep-seated vesicles, and you cannot for the life of you tell whether it is smallpox or chicken pox or something else. You get into a cold sweat, and you feel like the medical student when the professor asked him what he would do in a case of postpartum hemorrhage with the patient pulseless, and nearly exsanguinated. "Why," said he, "I'd run like the devil for a doctor."

A patient remained in a doctor's office all day recently, where he was examined by seven doctors. One said he had smallpox, and six called it chicken pox. When doctors disagree, Father Time must decide, which he did, two days later, when I saw him at the hospital with a well-developed case of smallpox.

We insist on getting the patient to the

hospital as soon as we can catch him. There has been fully seven hundred and fifty cases of smallpox unreported within six months, while we have received only three hundred and twenty-four at the hospital. Of the last four hundred and sixty-one patients treated at the hospital, three died. It would seem at first blush that these unreported cases should have been ferreted out and forced to go to the hospital, but it's "catching before hanging." There will always be mild unrecognized or concealed cases at large during a part if not the whole time of their illness. The disease then travels like chaff before the winds of heaven, and the only safety lies in vaccination.

In a group of eight young white men at the hospital, seven had never been vaccinated and the eighth said he had been vaccinated several times but it did not take. I have very little sympathy with those of mature years who have smallpox when they have had an opportunity to be vaccinated.

We should try to remove the cause rather than to suppress the disease after it has appeared. We are attempting this in tuberculosis; we certainly are depending less on rigid quarantine and more on the destruction of the mosquito in yellow fever, while the time is coming when we will think more of screen doors and oil on the troubled waters in malaria than of quinine and calomel.

A family of ten was found with two well-developed cases of smallpox. The mother was in the beginning of the pustula stage. All the members of the family were vaccinated. None contracted the disease. They were quarantined in their home, and observed the regulations strictly, for they lived in calling distance of my residence. One man was vaccinated after the beginning of the fever, and, I believe, there was considerable modification of the exanthem.

I do not know whether insusceptibility to vaccinia, or rather failure of result after repeated attempts to vaccinate, does of necessity indicate an insusceptibility to smallpox. I do know that there has not been a severe case of smallpox occurring in a patient who had been repeatedly vaccinated even unsuccessfully. The use of revaccination does not always mean immunity, but the process should be repeated two or three times, thus eliminating all sources of error, for such failure may have been caused by the employment of inert lymph or imperfect technique.

I do not think the authorities explain lucidly why a person may be immune to vaccinia at one period, but later develop a susceptibility to vaccine disease. I vaccinated one nine-year-old child successfully who had been vaccinated six times without any result. While no record was kept of how many admissions to the hospital were post-vaccinal cases, still I do not believe that more than twenty-five per cent had ever been vaccinated at all. I requested our superintendent to examine every arm during the present epidemic, and he informed me that he has not seen a good scar in a single case of severe smallpox.

Again, we have seen many cases which were exposed to smallpox without contracting the disease, yet were successfully revaccinated. Personally, vaccination has taken on me once, although I have been repeatedly vaccinated since infancy. In fact, during this epidemic I get vaccinated about every time the moon changes.

We have sent a competent man to every school in the county, offering to vaccinate the pupils free of charge. Not a third availed themselves of the opportunity. Many of the parents stopped their children from school rather than be vaccinated at any time, while others said the children would soon have to go to work and they could not let them have sore arms. They

have thus missed the best time of the year for vaccination. The county school board will require a certificate of successful vaccination as a prerequisite to entering school this fall, the most undesirable season of the year for vaccination from every standpoint. We have notified them we will furnish vaccine points and they can choose their own vaccinators, provided they do not charge for such service. I think, however, it would be to the best interest of the county to pay competent physicians enough to justify their taking the same pains with vaccinations as they do with any other surgical procedure.

The oftener one is vaccinated the less likely he is to contract smallpox. One should be vaccinated at least every seven years, and also whenever exposed to smallpox or while there is an epidemic.

Three children were born at the hospital during February while their mothers had smallpox. One child was in the papular stage when born. The other two were vaccinated the day of their birth. One had smallpox, the other did not. All recovered.

As to the technique of vaccination, I shall only say that it is always done under aseptic precautions. The vaccination area is thoroughly scrubbed with clean water and absorbent cotton, using sufficient friction to distend the cutaneous capillaries. After the arm is dried with absorbent cotton, the vaccine point only is used, taking plenty of time to rub the virus well into the abraded surface. No shields are used except when requested. We try to take every precaution possible to popularize vaccination. We are often told, "I would rather have the smallpox than to be vaccinated, because Susan's arm nearly rotted off when she was vaccinated." We do not try to see how many we can vaccinate in a given time, but we insist on time and care being taken, thus minimizing the danger of accidents.

We had in our jail twenty-seven cases, all contracted from a case of smallpox so mild as to be unrecognizable. The strongest evidence I can present of the value of vaccination is given in the fact that these were the only cases occurring among nearly four hundred inmates who were more or less exposed to infection. I vaccinated every one in jail at once, and for two months from the date of the first outbreak I vaccinated daily every one sent to jail.

Physicians are often in doubt as to what constitutes a good scar, or a typical vaccine cicatrix. We do not require school children nor prisoners in jail to be revaccinated if they can show a good scar. "The typical cicatrix is round or oval, distinctly excavated with well-defined margins, reticulated or foveolated, and altogether presenting the appearance of having been stamped into the skin with a sharply cut die." Usually a pitted scar marks the site of a successful vaccination. If, however, the vaccine process destroys the skin to a sufficient depth, there may be no pits. Some good scars are smooth and glossy, and some elevated like a button. A large scar does not necessarily mean a good scar.

Public sentiment demands that we quarantine these patients "away from us" at any rate, but this is well-nigh impossible, for the reason that we must also quarantine all those exposed to or associated with a patient, thus entailing a great and useless expense on the public.

Quarantine gives a fancied security, and an indisposition to submit to vaccination. In one instance we found twenty-two negro men in a store. None would allow our inspector to vaccinate them. One of these men contracted the disease, was taken to the hospital with hemorrhagic smallpox, where he rapidly succumbed. Then the others were anxious to be vaccinated.

They nearly all want to stay at home, never thinking or caring for the danger to others. You might just as well attempt to quarantine a lot of rats in their holes as to try to keep a lot of negroes from gadding about if they are able to travel. Threats do no good. It would take all the sheriff's deputies and the State militia to quarantine the cases that have occurred in Shelby County.

As to treatment, I am reminded of the reply a Kentucky horse breeder gave to the question, "When is the best time to break a colt?" "Begin with his grandmother, sir!"

So I say to you, vaccinate, revaccinate, and "then some."

DISCUSSION OF THE PAPER OF DR. RAINES.

DR. CHARLES P. McNABB, of Knoxville.

Here is one instance of a child born with smallpox, which shows that the disease was transmitted from mother to offspring in utero, proving that the bacterium had passed from her blood through the decidua serotina to that of the fetus. Verily, a much-needed prop to the fast-crumbling theory of heredity.

DR. WILLIAM LITTERER, of Nashville:

Dr. McNabb has brought up a very interesting point concerning smallpox as being due to a bacterium. I do not think smallpox is now considered to be a disease due to a bacterium, but to a protozoon. Councilman, Brinckerhoff, Tyzzer and others working in the laboratories at Harvard University have decided that the disease is due to a protozoon, called the "Cytoryetes Variolae" of Guanieri. Their excellent work has been published in the *Journal of Medical Research*, which represents an exhaustive monograph, with pictures and draw-

ings showing the life cycle of this particular organism. Calkins, of New York, as well as W. T. Howard, of Cleveland, have confirmed Councilman's observations and results. They have perfected a method by which you can make a positive diagnosis by the microscopic findings, absolutely differentiating it from chicken-pox or any other allied condition.

The diagnosis by sections can be made in less than three hours. This certainly is a great step forward toward differentiating this disease from others simulating it.

DR. McNABB: I used the word bacterium in a slipshod manner.

DR. RAINES (closing the discussion): I wish Dr. Litterer would enlighten us on one point. We know that smallpox is very often followed by boils or collections of pus under the skin. After you think your patient is entirely well and you want to dismiss him from the hospital, all the pock marks having been smoothed over, these little collections of pus appear under the skin. Where patients have these collections of pus under the skin, the question is, Should we keep them in the pest-house until the pus is out of the skin? Are they dangerous like the scales from the pox?

DR. LITTERER: There is secondary invasion from the streptococcus, and that is supposed to kill the secondary conditions. In the pustular stage the pustules have been found to be due to streptococci, as in scarlet fever. There is streptococcus infection, more or less severe, in practically every case of scarlet fever. Where the opsonic index is lowered, the streptococci gain entrance. When the opsonic index in smallpox patients is lowered, streptococci gain entrance and produce pustules. Moreover, there may be staphylococci as well as streptococci. I do not know as to how long you should keep these smallpox patients in quarantine. I do not know much about that; but the pustular condition is due to streptococci.

TREATMENT OF TYPHOID FEVER.

JOHN THOMAS MOORE, M.D., ALGOOD.



HIS is a subject that is old and worn, but it should never cease to be a live issue to physicians who have the responsibility of treating a disease of so grave a nature.

I have not in this paper endeavored to cover every phase of the treatment of typhoid, but have included only that which I consider of most importance.

Since the discovery of the etiological factor of this disease, the treatment has been very much simplified, but there is still a wide divergence of opinion as to the best modes of procedure in treating typhoid.

One of the most important duties which comes to us is to adopt all the means at our command to prevent infection.

This is quite a proposition when the patient is in a family where they are not able to have a graduate nurse, and are ignorant of the ways by which the infection is transmitted, but even under these circumstances a great deal can be done to prevent the disease spreading to others. If we follow the details as laid down by our best authorities as closely as possible, if we guard every avenue by which the bacilli leave the body of the patient, and by means of disinfectants and boiling water destroy them before they are cast to the outside, we are performing a duty which we owe to the public, and which will result in the prevention of a serious disease and in the saving of life. By explaining to those in charge of a case the necessity of certain precautions we can usually get their coöperation, and are enabled to get results in proportion to our own earnestness in the matter. We should instruct those who are nursing the case to have absolutely nothing to do with the

preparation of food for others. That they should thoroughly cleanse their own hands before eating, that all dishes in which food is given to the patient are not to be used by others unless they have been previously boiled, and as to excretory products from patient, management of bedclothing, etc. By doing this, going into these details, we can enlighten the people, command respect, and do credit to our profession.

DIET.—The question of diet is the most important part of the treatment. An absolutely liquid food from beginning to end, I believe, is the plan that is almost universally accepted. There are some cases, however, that will do well and take solid food all the way through. I have seen them do so, but it is a dangerous policy, for no man can distinguish the cases that will bear it. The mildest, and most insignificant types of this disease, should be guarded as to diet and otherwise just as severe forms are.

A mild case may, under improper diet, develop into a severe one with grave complications and possibly death, which could by proper care have been avoided. It would be far better to deprive many of food they might have taken than take chances and cause the death of one. Simply stating that a liquid diet should be given is putting it in a very gross manner. It becomes necessary to select the kind, quality, and quantity of diet. We have to be guided by conditions present and the individual. We can have no set rule, because no two cases are exactly alike.

Milk, broths, beef juice, tea and coffee, are the most essential things. It is very important to use milk which has not been contaminated, and if there is any doubt as

to its purity it is better to substitute other foods altogether. Sweet milk will agree with some cases, but the more typhoid I treat the less I use it. It causes meteorism, disturbs the stomach and bowels in a majority of cases, and if given it is necessary to watch its effects closely. Butter-milk is very much better and will agree with most cases. Buttermilk alternated with broths, beef juice, and albumen, is in my opinion best suited to all cases. If there is marked tympany it is best to withhold all milk for a few hours. An abundance of water should be given throughout the course of the disease.

I do not believe that there is much efficacy in the so-called predigested foods. They are of doubtful nutritive power, contain alcohol which may not be needed, and they are sometimes toxic.

Drugs.—So far as drugs are concerned, there are none worthy to be mentioned as a routine treatment. In my opinion there is no disease in which the use of so many drugs has proven not only valueless, but absolutely detrimental to the patient as in the treatment of typhoid. I am sure that the practice of giving too many drugs is followed by many good practitioners in Tennessee today. There are still some who cling to the old remedies. They are slow to believe the drugs they have given so long are of no value, but for me I will never dose a typhoid patient on old or new remedies until they have been proven to be of specific action. In view of our present knowledge, it seems the height of folly to give drugs indiscriminately to a patient having a self-limited constitutional disease. I think an initial purge of calomel or castor oil is necessary in almost every case to relieve the intestinal tract of undigested food. This relieves headache. In the course of the disease bowels should be moved by enema every twenty-four or forty-eight hours. Diarrhœa will almost always be relieved by proper diet. It may

be necessary to withhold all food for a few hours. Then give the simplest diet; albumen and whey come in good. Avoid opium if possible; if given, it had better be administered in the form of *landanum per rectum*. Tympanities should be relieved by modification of diet. Hot stupes give great relief.

For hemorrhage secure absolute rest, if possible, without an opiate. It may be admissible to administer a small hypodermic. Apply a light ice-bag to the abdomen. I have noticed that this will give comfort to the patient, and assist in avoiding the opiate, as well as assisting in the prevention of the hemorrhage. I have no faith in the administration of any drugs for this condition, except calcium salts. Calcium chloride may be given ten or fifteen grains every four hours. All food should be withheld for a few hours, as digestion is always impaired when there is hemorrhage.

The reduction of temperature I do not believe is necessary unless excessive. If it is around 103 or 104 constantly, I direct a tepid sponge bath or pack, or if this does not suffice, a tub bath, beginning with the water a little warm and gradually reducing the temperature until it is 70 or 75 degrees F. This method will usually reduce temperature one or two degrees, which is sufficient. I do not believe in the ice-bath. It is too great a shock to the patient. While it does reduce temperature, the patient is no better, and probably worse. It is necessary to reduce only high temperature. When I first began to treat typhoid I thought I was guilty of an awful crime if I did not keep temperature reduced to 101 F. I soon found that I could not do this, and also that it was not necessary to do so. Many cases will do well with one or two tepid baths a day. I know they will do nicely, for I have seen it tried with fine results. The fever is nature's effort to combat a dreadful

poison, so unless it is drying up the patient we need not be alarmed.

Stimulants should be given when indicated as in other diseases. Alcohol is not necessary in many cases, but it seems of inestimable value in cases attended by toxemia; then it is necessary to give six or eight ounces in the form of whisky in the course of twenty-four hours.

I wish to say, in conclusion, I am looking forward to the day when there will be a successful serum treatment of typhoid.

DISCUSSION ON THE PAPER OF DR. MOORE.

DR. L. A. YARBROUGH, of Covington, was asked to open the discussion. He said:

Mr. President: I got in rather late, and did not hear all of Dr. Moore's paper, but that portion of it which I heard was interesting. I think the members here will bear me out in saying that, as a rule, we do not have many cases of typhoid fever in our county, and it seems that we have to come here to learn something about it. Occasionally we do have a few imported cases. As the essayist stated, we should try to keep the temperature below 102 degrees, and most of us never want to see it get over 103 degrees at the outside. If it should reach that point, an effort should be made to reduce it at once. I have given comfort to nervous patients by prescribing small doses of bromides and gelsemium, getting a soothing effect. These patients require very little opium. I would hesitate in a case of typhoid fever before giving a hypodermic injection of morphine. There may or may not be delirium in some of these cases. We should treat the case symptomatically. An ice-cap, applied for ten or fifteen minutes to the head, and then changed from one place to another, affords great relief. We have been rather slow to adopt the English treatment of giving these patients anything they want to eat, as, for instance, solid food. Much good results from the giving of freshly prepared beef juice, squeezing the juice out of the broiled meat, getting something that you know is fresh and sterile. In some cases I have obtained very good results from predigested beef, and it has proved very beneficial in those cases where we cannot give buttermilk or other things we want. I am afraid to give sweet milk to patients with typhoid fever, especially children. I have de-

rived a good deal of benefit from the use of subnitrate of bismuth with Tulley's powders, the only form in which I use opium. Bismuth is coming into style again, because they use it in treating sinuses, and it proves to be a very fine antiseptic. Large doses of bismuth will control hemorrhage as quickly as anything you can give. As a liquid diet, I would suggest chicken soup, freshly prepared. This will give you one of the finest foods you can possibly use in feeding a typhoid fever patient.

DR. J. P. BATES, of Nashville:

I have passed through a hospital experience of about three hundred cases of typhoid fever, and merely rise to endorse everything Dr. Moore has said with reference to the treatment of the disease. I especially want to commend his method of using tepid or warm or hot baths, if the patient does not bear cold baths well. Methods of giving baths can be a little better arranged than by taking the patient out of bed and putting him in a tub. A rubber sheet can be laid across the bed and folded at the corners. There is enough sag in the mattress to allow the water to accumulate around the patient; you can have three or four inches of water, and you can souse him in the bed and take him out of the water without having to lift him in and out of the tub. I have abandoned the ice bath. I get just as good results with warm baths, but I do not care any more for the Brand method of treatment, because many patients cannot stand it.

DR. W. A. GEORGE, of Nashville:

I would like to say a few words with reference to diet in typhoid fever cases. There is one form of diet that was not mentioned in the paper, and which I have found valuable in a great many severe cases of typhoid. In fact, I have always used it with good results. It is not only good for its food value, but for its antiseptic value, and that is the use of fruit juice. A great many of these patients take water poorly, but if you add lemon juice they will take water nicely. Lemon juice, orange juice and other sour fruit juices are valuable for their aseptic and antiseptic effect, in that they will keep the intestines cleaned out as thoroughly as any antiseptic you can use. As a nitrogenous food, I have found 20 per cent gluten one of the most valuable. It may be obtained in almost any city; in Nashville at the Sanitarium Supply Company. The gluten is washed out of flour by a certain method of

washing, so that there is scarcely anything left but gluten. It is then mixed with flour to make 20 per cent gluten. This is thoroughly baked in the form of crackers and then ground. When thoroughly ground and made into gruel, it does not form chunks or sticky masses like some of the other food preparations. This can be taken and borne nicely in these cases. I have taken through a great many severe cases of typhoid fever in sections of the country where typhoid was prevalent by these two classes of food—gluten food and fruit juice.

A few words about the treatment. I have just one point to make with regard to sponge baths. I was interested in the remarks of the essayist in regard to tepid sponging. Some patients with typhoid fever are troubled with chilliness nearly all the time. If you apply any cool treatment, it will make them chilly. The worst nervous cases of typhoid can be quieted and the temperature reduced one or two degrees in an hour or two, and sleep secured, after the application of a very hot sponge bath, like Dr. Bates mentioned. Take an ordinary towel, wring it out of water as hot as the nurse can bear, apply it to the skin of the patient, press it down, and raise it up, and repeat this process. This can be kept up for half an hour or three-quarters of an hour at a time, and at the end of that time the temperature is reduced one or two degrees, and it will be found that the patient has quieted down. This is valuable where cold treatment cannot be given.

THE PRESIDENT (Dr. Jere L. Crook, of Jackson):

As to the antiseptic treatment of typhoid fever, in the absence of my father, I will say that he is still using the antiseptic treatment with the same gratifying success formerly reported.

DR. GEORGE E. PETTEY, of Memphis:

This is a subject in which we should all feel an interest, as typhoid fever carries off a good many people each year. I cannot agree with what has been said as to medicine being of so little value in the treatment of this disease; on the contrary, I must insist that medicines, properly administered, are of the greatest value. Not that by the administration of medicine we can destroy the typhoid germ in the blood; we probably cannot do that; but we must not forget that the germ causing this fever has invaded a living human organism, the condition of which may vary from perfect

health to profound toxemia. But, even if the system is in perfect working order when the germ is taken into it, the impressions made by this specific germ upon the nervous system during the period of incubation are such as to bring about a marked, if not profound, auto-intoxication. The earliest manifestation of the disease is a slight decrease in the elimination of waste products by the bowel, progressing day by day until there is distinct constipation, dryness of the skin and reduced excretion of urine. This period is marked at first by slight lassitude, increasing to distinct languor, with slight headache, and later to general malaise, and a little later to a rise of temperature, followed, probably, in a few days, by diarrhoea. The noticeable rise of temperature would generally be considered the beginning of the attack, but that is not true. Back of that, running for a number of days, was a condition of functional derangement, causing at first slight, but later almost complete, retention of the products of waste. If this occurred in one whose system was in perfect working condition, the degree of autointoxication resulting was moderate; but if in one whose system was already foul, the degree of autotoxemia was intense. It is my opinion that the severity of the attack, the height of the fever—in fact, the activity of all the symptoms—depends more, very much more, upon the degree of autotoxemia present than upon the activity or virulence of the specific invading germ. Now, if the patient's system be thoroughly cleansed of toxic matter as the initial step in the treatment, and the emunctories kept active, the system surcharged with antiseptics and unencumbered by improper nourishment, the severity and duration of the attack can be materially lessened and the mortality reduced almost to zero.

Ten years ago this summer I completed the treatment of a series of 216 consecutive cases of typhoid fever, in which series there was not a death, hemorrhage or an hour's delirium. The longest duration of fever was twenty-one days and the shortest nine. Tympanites or diarrhoea were not present in any case after the first few days of treatment. This series was treated by what I would term the eliminatives-antiseptic method. The treatment was begun by administering, usually, of calomel 1 gr., podophyllin 1-20 gr., and strychnia 1-30 gr., with salol 5 gr., or guaiacol 3 gr., at intervals of two hours, and these were continued until the intestinal canal was well emptied

and the secretions thoroughly aroused. Then the calomel was reduced usually to 1-4 gr., and the podophyllin to 1-40 gr., and the strychnia to 1-60 gr., and these were given at such intervals, but sufficiently often, to insure from three to five evacuations from the bowel during each twenty-four hours, and continued until the period of convalescence was well established. As soon as the bowel began to move from the purgative the intestinal antiseptics were increased and given with a free hand throughout the entire attack, salol, guaiacol, the sulphocarbolates and turpentine being given according to which seemed to be most acceptable to the patient. Buttermilk alone was used as nourishment. The fever never reached a higher point than it had attained upon the time the purgative began to act. From that time on there was a progressive decline in the fever, with a corresponding amelioration of all the symptoms, and usually by the end of the first week of treatment convalescence was fairly well established. In most of these cases the treatment was begun during the first three or four days of the fever, and in these the fever terminated on or before the fourteenth day.

Little difficulty was experienced in controlling the temperature, either by cold sponging or by the moderate administering of antipyretics, but, whatever method was used, the temperature was held down uniformly. This, in my judgment, was made possible by the entire removal of the autotoxic element as a cause of the fever. With that element out of the way, the fever springing from the specific poison ran a much milder course; and while I do not know that a single typhoid germ was destroyed by the treatment, the system, as far as possible, was freed from other incumbrances and thus given a chance to employ all of its activities in a warfare with the invading enemy, with the result that the natural restorative forces of the system, probably through the phagocytic action of the leucocytes, proved to be amply able to take care of His Honor—the typhoid bacillus—and to either expel him or render him inert. This they did with uniform certainty, and in one-half the time it would have required had the system been allowed to remain toxic, as it would have done had the no-medicine policy been adopted. With this experience to sustain me, I feel warranted in saying that if medicines are not useful in the treatment of typhoid fever, then there is no place for the administration of medicine in the treatment of any disease.

I do not consider the cold tub bath a satisfactory or safe method of controlling temperature. It is unnecessarily severe, and, if the patient is properly treated, milder measures will meet every indication. The advocates of this measure cannot show a mortality sufficiently low to be attractive to one who has found a safer and better way.

DR. CHARLES P. McNABB, of Knoxville:

I want to say a few words with reference to typhoid fever, and first in regard to tympany. When I began the practice of medicine in 1880 I had typical cases of typhoid fever to deal with, in which the patients had swollen abdomens, dry tongue, subsultus tendinum, muttering delirium, etc., and, being in the country, the diet was chiefly sweet milk, and I had about 10 per cent. mortality. For some years I have not given typhoid patients sweet milk, which is, if not properly modified, a food almost as solid as a beefsteak, and a most fertile culture medium for intestinal bacteria.

I have used acetozone as an intestinal antiseptic, in doses of about fifteen grains a day, and believe I have seen much benefit from its use; at least in seventy-six cases under my care in which it was used there was not a death.

With regard to the temperature in typhoid, a temperature of 103 to 105 degrees indicates an heroic effort on the part of the system to destroy or inhibit the invading germs, and whenever you lower the temperature very decidedly, you thereby thwart nature's efforts in that direction.

Referring again to diet, I am convinced that many typhoid patients die from starvation, and I believe we should feed these patients more than we have done in the past. We do not pay enough attention to the caloric value of the food taken, or to the nutritive demands of the cells and tissues of the stricken body. For instance, sweet milk, doubtless the commonest fever food, especially here in the South, is of the value of 20 calories to the ounce, and that would require 100 ounces of milk to be administered in twenty-four hours to get 2,000 calories into the patient, which is certainly not extravagant for an adult—indeed, it is 500 to 1,000 short for a full-grown man. To get so much food into the patient and accomplish the more important desideratum of securing its digestion and absorption may try our resources, but it can be done in nearly every case if we remember the physiology of digestion and use only such foods as are digested in the upper

portions of the digestive tract, and such as are easily digested and leave a minimum residue; but, in addition, more or less assistance may be called for by the digestive organs, to respond to which may require a very little accurate knowledge of therapeutic and dietetic principles.

As to alcohol, I think the doctor said he did not give less than eight ounces of alcohol, by which I presume he meant whisky or some other spirit containing about 50 per cent. alcohol. When we consider that not more than one or two ounces of 95 per cent. alcohol can be oxidized in the human system in twenty-four hours, and that quantities in excess of that amount, when taken into the system, must be eliminated unchanged by the excretory organs, the uselessness and possible danger of such large daily allowances of alcohol become apparent, and a large majority of our fever patients do not need it at all. If the tongue gets dry, cracked and red, and tympany appears, some able authorities say give alcohol, but Dr. Wood, many years ago, recommended turpentine; and if my experience in several hundred cases of typhoid fever has been worth anything, it is a far better remedy in that condition than alcohol, and when the black shadow of collapse hangs over the scene, you may have alcohol and I will take camphor, spartein and digitalis, and save as many lives as you will.

DR. W. FRANK GLENN, of Nashville:

I would like to say a few words on this subject of typhoid fever. I have some ideas regarding it which may run counter to the general run of the profession. I do not believe a typhoid fever patient is nourished much, if any, by anything you give him. You may stuff food into the stomach as much as you please, but you do not know where it goes. The feeding of the patient should be guided by his appetite. We should listen to nature, and we know that hunger is the calling on the part of the cells of the body for food, and you do not need to feed a patient until he wants it. A man will not starve. I never saw one starve yet, but have seen many killed. At first, empty the alimentary canal of the patient. Give him a few small doses of calomel, then a big dose of salts, wash his colon with saline solution, and then stop. I have had patients go fifteen days with typhoid fever without a bowel movement without any disadvantages, and get well. Without the least attraction to myself, I will say that I have never lost a case of typhoid fever

unless I had a consultation, because I let the patient alone. After emptying the bowels, the main thing I rely on is lemon juice, which can be given the patient, whether he wants it or not, in small quantities in the form of lemonade. If you give a tablespoonful of lemonade every half an hour, in from twenty-four to forty-eight hours the patient will break out in a copious perspiration, and the temperature will drop. If he is not hungry, do not feed him. You will not have tympany, gas or nervousness. Keep the patient absolutely quiet. Keep the friends or people out of his room. The idea of keeping a typhoid patient in a dark room is a mistake. Let the sunlight shine in. Sunlight is nature's life, nature's disinfectant, nature's strength. It is essential to every animal and plant on earth, and without it you cannot have life. I thoroughly agree with those who say that, if you give anything, give intestinal antiseptics. If the patient has gas in the lower part of the ileum, some agreeable form of iodine is best, and such antiseptics as acetozone and carbonate of guaicol can be used. Acetozone has disagreed with my patients. I read a paper in reference to reducing fever several years ago by the effect of heat. It is known that heat, when applied to the vaso-motor centers on the outside of the spinal column, will contract the blood vessels and lessen the amount of blood in the capillaries when stimulated. Now, if you apply a hot water bag three or four inches wide on either side of the spinal cord from the middle of the neck down to the lower dorsal region at a temperature of 115 degrees, the temperature of the patient will fall quickly. I remember to have had a case of typhoid fever in East Nashville in a lady thirty years old. Her temperature went up to 104 degrees one night, and the nurse telephoned me about it. I told her to test the temperature of the water that was put in the hot water bag and have it at 115 degrees, and apply to spine. She did so, and the next morning she said she had never heard of this before. At any rate, the patient's temperature went down two degrees in less than an hour.

You know the physiological experiment of cutting the sympathetic nerve in a rabbit's neck. The physiologist will tell you that when you cut the sympathetic nerve in a rabbit's neck, increased rapidity of circulation takes place, and increased temperature. If you have increased temperature, stimulate the vaso-motor centers with a hot water bag, and you cause the inhibiting vaso-motor nerves of the

sympathetic centers to contract the blood vessels, and thus lessen the blood supply, and thereby the body temperature falls.

With reference to the application of cold, I have vehemently denounced cold baths ever since they came into vogue, or the application of ice bags to typhoid fever patients. As the normal temperature is 98.2 degrees, where is the logic of putting a patient in ice water to get it down to 98.2 degrees? If you put a patient in a comfortable bath at 70 or 80 degrees, the temperature must fall. I believe, as one of the gentlemen said, any man who puts a patient in an ice bath runs the risk of killing him. I recall a typhoid patient I had ten years ago, a young man twenty-one years of age. Before this typical attack of typhoid fever he was in vigorous health. He had the regular prodromic symptoms, except the dry tongue. His case ran a typical course without complication, except he had high temperature. He was never delirious; he had no tympany, no derangement of the bowels; the kidneys acted normally. On the twenty-first day of the disease the temperature reached 105 degrees. His mother and father were dead. I suggested, simply as a release from responsibility, consultation. One of the most prominent physicians in this city was called in. He examined him carefully. The patient had had no intestinal hemorrhage. He had had two natural bowel movements that day. My consultant asked what he had had to eat. I told him that the patient had had nothing by mouth for twenty-one days, except freshly-made buttermilk and pure water. He could not take whiskey. He could not eat eggs. My consultant said that he was afraid he would die; that he would starve to death. He said the patient ought to have egg albumen, alternated with beef juice. I replied: "Doctor, if we give the patient those things, they will start his bowels moving and kill him." He said the patient would die sure if this was not done. I submitted the results of the consultation to his sister and said we disagreed. I said: "You must decide, because he is a sick man, yet I think he will get well." We commenced to give him egg albumen and beef juice. Diarrhœa developed that night, and the next day at 11 o'clock he died. I believe he would have been living today if we had not changed the diet.

Dr. J. T. MOORE, of Algood:

There are only one or two points I want to speak about, and one is the use of alcohol. I

did not give whiskey in most cases, and in a large majority of the cases I gave very little, probably three or four ounces a day. In a few cases with extreme toxemia I recommended six or eight ounces a day, and in those in some way it seemed to have had a good effect. In those cases which are very delirious whiskey acts well. Those are the cases in which it is necessary to give it in large doses.

With reference to intestinal antiseptics, Dr. Crook says that his father has for years used intestinal antiseptics with such great success in the treatment of typhoid fever that he continued to use them. In this connection I brought out the point that we think we cure our patients with the things we have used so long, and in typhoid I do not believe it is the intestinal antiseptics that have reduced the mortality rate. It is probably other means, and I have no doubt if Dr. Crook's father were to leave off these intestinal antiseptics and do everything else just as he does, he would have the same results. Dr. Glenn believes in intestinal antiseptics. He spoke of using intestinal antiseptics when there was tympanites. He likewise corrects the diet, and then gives intestinal antiseptics. You may have a case that has meteorism to a great extent, and you may give an intestinal antiseptic as long as you please, and continue the same diet; that patient will not get any better; but if you withhold food for a few hours and correct the diet, your patient will get better, whether you give intestinal antiseptics or not.

I have not kept a correct record of all of my cases, but of the last seventy-five cases of typhoid fever I have treated, I have lost only one, and I believe death was brought about in that case through an error in diet. I have not given intestinal antiseptics. I would like Dr. Crook, or someone else who believes in intestinal antiseptics, to explain why it is an intestinal antiseptic does any good when the typhoid bacilli are in the blood. I cannot understand how intestinal antiseptics can reach the disease when we have a constitutional disease with only these local lesions.

Dr. JERE L. CROOK, of Jackson:

I will answer the doctor's question by saying that, according to former statistics, the mortality from typhoid fever in the practice of some physicians was from 5 to 10 per cent., while in the practice of others it was said to be from 10 to 15 per cent.; but since the newer intestinal antiseptics have been introduced and

used, the mortality has been materially lessened. Of course, carbolic acid and iodine have been used for years, and the reason why intestinal antiseptics have received such a black eye—that is, the modern remedies—is because of Osler's book, which condemns them. Notwithstanding Dr. Osler's position, however, the experience of a great many men in this country is opposed to it. I know there are hundreds of practitioners who have been using carbonate of guaiacol, and latterly acetozone, and, as a result, the mortality from typhoid fever has been reduced marvelously—to less than 2 per cent. Dr. Bosworth spoke of a paper my father read at the Chattanooga meeting of the Association thirteen years ago, in which he reported excellent results from the use of carbonate of guaiacol and other means of treatment in typhoid fever.

In reference to the why and wherefore of it, if we have a suppurating wound to deal with, what are the indications? Drainage and antiseptics. Antiseptics to secure asepsis. Nothing, unless it kills the germs, can render a wound aseptic. The experiments of Novy at Ann Arbor have demonstrated that acetozone will

kill every form of germ life in a short space of time, not only in the test tube, but in the living animal. The intestine of a rabbit has been rendered absolutely sterile in thirty minutes after the injection of solutions of acetozone in the same proportions as are used in typhoid fever cases. That proves that the intestine can be sterilized. We have a condition where the fever depends largely upon the extent, the size and gravity of the ulceration in Peyer's patches. If we could introduce a substance by the mouth that will pass down through twenty-five feet of intestine, a substance which is not absorbed, and will kill the germs and sterilize the intestine of the rabbit, we can secure the antiseptic effect upon the germs in the intestine of the human subject. The germs in the blood are absorbed through the small intestine. Take soldiers on the battlefield. If we could cut off the commissary department, the men would starve to death. In the same way intestinal antiseptics will kill millions of germs in the intestine, thereby cutting off the source of supply in the blood and diminishing the great amount of poison which the patient's system has to contend with.

DIAGNOSIS AND TREATMENT OF ECZEMA.

J. M. KING, B.S., M.D., NASHVILLE.

THAT we may discuss this subject in its entirety, yet briefly, I shall present the present-day notions of the affection, including the pathology and a description of the varieties of eczema, followed by differential diagnosis and treatment.

Just as there was for many years two schools, or contending factions, with reference to the course of syphilis and its treatment, there has been, and is today, two contending parties as to the cause and entity of eczema. One of the first workers in specialized dermatology, Hebra, of Vienna, held the opinion that eczema was a local condition and caused only by external irritation such as the action of heat or cold or some other physical agent, and chemical irritants, such as soap, mus-

tard, urine, etc. He practiced this and taught it. But Kaposi, his son-in-law, who was brought up under his tutelage and who succeeded to his professorship in the University of Vienna, broke away to a certain extent from the idea that eczema was due entirely to local and external causes. These two teachers, though, had much to do with fixing the idea that eczema was a local trouble. The other center for the study of this affection was the St. Louis Hospital, in Paris, and here eczema was regarded as an affection due almost entirely to internal disturbances, such as bring about depressed or impaired vitality and which interfere with proper nutrition, assimilation and excretion, and this belief was so strong and so prevalent that the writers even spoke of these inter-

nal disturbances as the "eczematous diathesis." While there are some workers along this line now endeavoring to show that eczema is due to a specific cause, such as a micro organism, as Una attempted to do only a few years ago, the majority of authorities, Continental, English and American, teach that it is due to both internal and external causes, acting sometimes in conjunction and at other times separately. So today, after the subject has been sifted for these many years, we may regard this affection as one brought into existence by either external or internal causes, acting separately or acting together.

The greatest difficulty met with in the diagnosis of eczema is its variety of lesions, but in this respect it does not surpass syphilis, although it comes second to it. I think it best to say here that these varieties of lesions spoken of, depend upon the local pathological conditions, and when these are understood the diagnosis is made easier. So, in explanation of these varieties, I shall present the pathology. With reference to the local pathology, I shall present it as follows: the irritant, whether external or internal first exerts its influence upon the nerve terminals in the corium; then there follows an inflammation, varying in degree, accompanied with increased heat, redness and swelling, and as a matter of course, with a perverted function of the surrounding tissue.

The inflammatory condition in the corium has its direct effect upon the tissues of the corium and epidermis, and the same condition affects the nerves of sensation, producing itching and burning. All of this is no more than general pathology, but in addition this direct effect of the inflammation upon the corium gives rise to the special pathology in the case, as that of parakeratosis, acanthosis, and hyperkeratosis.

The varieties of eczema, or the lesions which characterize certain conditions of eczema as varieties, are directly dependent upon the processes above mentioned. For instance, if the grade of inflammation is mild, the erythematous variety would be formed. In this case there is redness, heat and swelling, burning or itching, but not the excessive perversion of function that is seen in other varieties. The development of epithelial cells is increased, which is manifested later by the slight scaling of the surface. The course may stop here, but if the degree of inflammation becomes intensified, and the tension or tensile strength of the epidermal tissue is weakened, there will be more infiltration, papules and vesicles will be formed and the pathological process of parakeratosis will begin, and if continued the epidermis is lost and the affected area becomes a red, unprotected, weeping surface. The epidermal cells fail to mature or fail to become cornified, and they undergo disintegration and solution, or are cast off as swollen, nucleated cells, leaving the surface without a protecting cover, thus forming the weeping variety. If parakeratosis takes place in circumscribed areas only, the eczema will be weeping in patches with erythematous areas intervening. But a subacute and chronic type of inflammation may follow the acute attack, when there is a slower but steady increase of nutrition which causes an increase of tissue growth, both in corium and epidermis, and this gives rise to the thickened papulo-squamous variety of eczema. So, dependent upon the grade of inflammation, different cases of eczema may be distinctly of one or the other of these varieties—*i. e.*, erythematous, papular, vesicular with weeping, squamous, or dependent upon varying degrees of inflammation in the different areas of the skin of the one patient, there may exist all these varieties in the one case, and this is the way it is usually seen.

An erythematous area may be surrounded by a vesicular, weeping or crusted area, papules may be observed here and there, and, at another point where the acute has become subacute or chronic, will be found the squamous: all these mingled and mixed on the same unfortunate individual. Infection may take place, adding pus to the scene.

We may define eczema, then, as an acute, subacute or chronic inflammation of the skin, manifested by erythematous, vesicular, papular, pustular or squamous lesions, accompanied by burning or itching.

In the diagnosis of diseases of the skin the strongest point is the appearance of the lesion itself. Then eczema must be differentiated from all diseases that may be similar to it, such as the erythematous, vesicular, papular, pustular, or squamous. A list of these diseases would include the erythemata, erysipelas, urticaria, pityriasis rosea, dermatitis exfoliativa, acne, lupus erythematosus, simple dermatitis, lichen planus, pityriasis rubra, prurigo, scabies, syphilis, ringworm, dermatitis, herpetiformis, herpes, Padgett's disease, dysidrosis, miliaria, psoriasis, seborrheal dermatitis, sycosis, and impetigo contagiosa.

The points of differential diagnosis must be briefly stated in discussing so long a list of diseases as above mentioned, in so short a paper, and thus only the cardinal points will be given. Eczema will always present some of its characteristic features. It may appear anywhere on the body, but its chosen site is a flexor surface; as it is an inflammation it is nearly always red, with some thickening and infiltration, and in the majority of cases, with papules, vesicles, or pustules. There may be weeping continually or but for a short time, and there may be crusts and scales, cracks may come in the skin, and there is always itching. All these signs and symptoms may

be found in the one case in but one patch, or in many patches, or even all over the body. So, in diagnosis look for redness, itching, vesicles, papules, weeping, crusts, scales, and cracks.

Erythemata.—Erythema simplex is a hyperemia, not an inflammation; there is no thickening or infiltration, and but little swelling; rarely itching and scaling. The papules of erythema multiforme are larger and more discrete. Erythema intertrigo may present some weeping, but the fluid is not so sticky as that of eczema.

Erysipelas.—Erythematous eczema may be mistaken for erysipelas when it is very acute with much swelling. Erysipelas usually starts at a point, spreads, the surface becoming red, shiny, and glazed looking, with an elevated, well-defined margin, and nearly always accompanied by fever. Erythematous eczema develops usually over the entire surface at once; there is later some scaling, the margin is not so well defined, and there is more itching and burning. Fever may be present, but rarely is, and when present it lasts only a day or two.

Scabies.—Scabies often in its general appearance, by the time the patient comes to the physician, looks very much like vesiculo-papular eczema. There is a history of contagion or a gradual spreading of scales from one part to all parts of the body, while in eczema the general eruption comes at once. The papules, vesicles, and pustules of scabies, are more intermingled than the same lesions of eczema and are more discrete. Sometimes they may be found arranged in a line over the mite burrow.

Eczema seldom presents the generalized eruption as seen in scabies. The itching is severe in both, but more annoying at night in scabies. The finding of the itch mite is conclusive.

Psoriasis.—Psoriasis is always scaly and dry, and the scales are thin and sil-

very, unless there is much oil on the skin. It attacks most often the exterior surfaces, but may appear on any part. Usually it is patchy and well circumscribed and of a peculiar bright red color. Frequently if the scales of the lesion are forcibly removed by a scraping method, little drops of blood will form on the surface. There is not so much itching. Squamous eczema, being a secondary form, would present a history of the preceding varieties of eczema.

Syphilis.—These two diseases of such great multiformity are rarely confounded as to diagnosis. Squamous eczema of the palm presents the greatest difficulty in differentiation. Both diseases are scaly, and in eczema both palms are more often affected, although both are *sometimes* involved in syphilis. In eczema the eruption is more generally diffused over the palms and fingers, while in syphilis it is patchy often with a wavy margin which may be infiltrated and ulcerated. Fissuring is a marked feature in eczema, but not of syphilis. Sometimes a diagnosis is impossible from observation alone. The color of the syphilitic palm may be a little darker red than that of the eczematous.

TREATMENT.

In discussing the treatment of this affection we should consider preventive, hygienic, dietetic, constitutional and local measures.

Preventative.—Individuals of inherited tendency to eczema of internal origin should refrain from stimulating drinks and foods, excessive diet of meat and sweets. Children who have a rough skin, zeroderma, or ichthyosis should have treatment to prevent the development of eczema. The infant's scalp and head should be carefully cleansed to prevent eczema. A man or woman who has eczema from a periodic nervous strain from over-

work should change occupation to prevent its occurrence or recurrence.

Hygienic.—The proper hygienic measures are essential in the successful treatment of nearly all cases of eczema.

Dietetic.—Diet in eczema produced by constitutional disturbance has much to do with the affection. Heavy meat eating, heavy eating of sweets, and heavy drinking of spirits and over-eating nearly always aggravates the case. If the case is believed to be one of internal origin, a rather rigid diet of bread, butter and milk with few vegetables (baked Irish potatoes, salad greens, snap beans, lettuce, okra). Coffee and tea and all spirits, except in the aged, should be prohibited.

If the case is thought to be of external origin the diet may not be so strict.

Constitutional.—I would make the same difference here as I would in diet with reference to the case being of internal or external origin, the one of external origin needs but little, if any, internal medication. But if the case is due to internal disturbances, constitutional medication is essential. But there is nothing specific in this treatment, and one's general medical training must be exercised.

If the patient has been a long sufferer, the nervous system will need special attention. Sleep, digestion, the action of the bowels, the urine and action of the kidneys should be considered. The chemical reaction of the urine I think is very important, since, in so many of the bad cases it is excessively acid, and this should be corrected by the alkalis. If there is rheumatism, treatment for it should be given.

External.—It is in the external treatment of eczema where the greatest skill is to be displayed. A powder, lotion or ointment may be ordered, but whether it is the one that is adapted to the condition is the important question. The ability and judgment to select this remedy comes only by special study and training, which must be

taken under the direction and guidance of a master of the subject. The therapeutics and pharmacy of the drugs must be well understood. The grades of inflammation above referred to must be recognized and drugs adapted to the condition selected and applied in the most effective way. The texts on the subject give all one should desire on the external treatment of eczema, but one would never learn to treat eczema from the text alone nor from a didactic lecture or paper. It is learned thoroughly only by the clinical method—the patient, the instructor, and the remedy.

If a detailed study of the external remedies should be desired, time would not permit it. However, I will attempt to express my views concerning the treatment of some of the phases of eczema.

Experience has established certain well-grounded principles which govern the application of local measures in the treatment of the many clinical phases of eczema, and these principles depend upon two points, especially:

First, the therapeutic action of the drugs used.

Second, upon the pathological condition existing in the case.

In discussing the first point I shall call attention to the fact that the remedies so used have rather a wide range of action. Some are merely bland and are only protective; others are antiseptic and anti-pruritic; others are keratolytic or keratoplastic, and others are merely stimulating to the corium.

In thinking of the treatment of a given case the consideration of the second point, the pathological phase of the disease probably requires more careful judgment than any other question.

It must be determined whether the case is acute or chronic, whether there is much heat or not, if there is weeping, if there is infiltration and hyperplasia and their extent, if there is hyperkeratosis. This ques-

tion determined, the physician, mindful of the therapeutics of the drugs used, will be able to select the drug or a combination of drugs and put them into the pharmaceutical form adapted to the condition in hand.

This leads up to an outline of the typical treatment of the different varieties or types of eczema.

In selecting the treatment of an acute erythematous eczema, which so often occurs about the face, a cooling lotion or ointment with a mild saline purgative may be all that will be needed. Let's see why. If the condition is acute, the parts involved are swollen, red, hot, burning, with but little itching. The eyes may be closed. But here there is no hyperplasia, no weeping. The object of the local application is to cool the surface, thus to allay the swelling and burning. An aqueous anti-pruritic lotion containing the insoluble zinc oxide and glycerine is well adapted to this condition. It may be applied by dabbing it in the surface several times a day and allowing it to dry, or it may be used as a constant wet dressing in strips of gauze. If at night an ointment is used, one containing a great deal of water is best adapted.

But if upon this erythematous area, papules and vesicles should appear, the pathology would be increased, the symptoms would become more aggravating, and the treatment should be different. There would be a rupture of the surface opening it for infection, and, also, allowing the serum to pour out on the surface.

There is a greater degree of inflammation in the corium with a corresponding change in the epidermis, parakeratosis is well marked, the epidermal cells are swollen and are undergoing solution and disintegration. Such a condition as above described will demand a varying line of treatment. At first a lotion is best adapted, and it should be alkaline, anti-

pruritic, antiseptic and slightly astringent with an insoluble powder suspended in it. This should be used frequently or constantly during the day. At night a thin ointment possessing about the same characteristics may be used. The next morning the ointment may be removed from the surface with black wash and olive oil without irritation and the lotion reapplied, and so on until a change is indicated. Within a few days the lotion may be left off and an ointment used all the time, with changes in the ointment to meet the conditions as they arise. If during and following the inflammatory stage, hyperplasia and hyperkeratosis should develop, the proposed stimulating and keratolytic agents are used.

If there should be a large red circumscribed weeping area such as is often seen on the leg, the surface may be sponged with bichloride of mercury hot, one to four thousand once a day for three or four days, followed each time with boric acid lotion to remove the bichloride; then dress with a constant night and day wet dressing of calamine lotion, later using an ointment to meet the resulting conditions; or the lotion may be applied during the day and the ointment at night.

Again, we may meet with cases of generalized vesicular eruption—limbs, trunk and face—with excessive weeping and much irritation. In such cases the application of the remedies in the form of a liniment made of lime water and olive oil, with zinc carbonate and boric acid in it, constantly applied in gauze, is well adapted. Care must be exercised not to chill the patient. Lactate of lead by shaking a drachm of *Liq. Plumbi Subacetate* with an ounce of fresh sweet milk and a few drops of phenol makes for these cases an application of which I can speak very highly.

It should be applied to the surface and

in gauze, and then bandaged to the parts, the pressure being light.

In such cases the anxiety of the patient is so great and the irritation so terrifying—remedy after remedy failing to bring relief—that the ingenuity of the physician is taxed to the fullest extent. The exudative and expoliated epidermis should be thoroughly removed from the surface once a day with boric acid solution or black wash and olive oil, never with water or soap and water.

Calcium lactate in these cases may be given internally with some benefit to raise the coagulability of the blood.

LOCALIZED CHRONIC.

The thickened, squamous lesions of eczema require a different procedure. In these cases there is much new growth of tissue in both the corium and epidermis with much itching, and treatment must be directed to the renewal of these three conditions. Stimulation may be used at the beginning, and if by this an acute stage is produced, the stimulating treatment should be dropped, to be taken up again as soon as the acute condition subsides. Tar and ichthyol and the mercury salts are the stimulating agents usually applied to quicken the circulation and remove the thickening in the corium while salicylic acid and resorcin are used as keratolytic agents. To thin the epidermis, a combination of these is the form the prescription usually takes, which is to be constantly applied. The effect of scrubbing these patches with a strong alkaline soap and hot water is good, and this may be done daily or every other day. The X-ray has a very fine therapeutic effect in these cases. It relieves itching and has a specific effect in checking epithelial growth. However, it is to be used only as an accessory and in conjunction with the other treatment.

There are other rare forms of eczema, requiring special lines of treatment, which will be left out of this discussion.

THE NEUROSES.

J. LANSKI, CHATTANOOGA.



HYSTERIA occupies the undefined territory between sanity and insanity, it merges into epilepsy and is associated with prostitution. Neuralgia, asthma, and dipsomania being characterized by paroxysmal explosions are similar to one another and are forms of epilepsy. As they alternate with one another, and as all of them may be distributed among the members of the same family, their close relationship is apparent. The symptoms of Grave's disease run so parallel to those of hysteria, and they touch each other in so many points, that some regard them as identical. Prostitution, crime, and insanity are usually in close association. The insane, the criminal, and the neurotic are invariably set with physical marks like Cain. Conversely, wherever such marks are found, intellectual perversion will be present. Thus we see a variegated number of afflictions and conditions so correlated as to suggest a common origin.

That disease is not a visitation from Providence is proved by bacteriology. The belief that witches cause hysteria reached the zenith of mischief in Salem at the end of the seventeenth century, and was then stricken down, never to rise again. That depravity is not the commodity of Satan, but due to derangements in development, is now held by scientists. The superstitious belief that the neuroses are visitations from demons, as well as the unscientific conception of them, as being creations of the imagination, are being denied by the researches made into the functions of the ductless glands and physiological chemistry in general. To theologians may have been revealed the true cause of the "Fall of Man," but science is satisfied with nothing short of proving a physical basis for

every human taint. The discoveries made in the physiology and pathology of the thyroids have given a clue to the theory that all the neuroses are due to faulty chemism resulting from faulty metabolism in one or several organs. The pathogenesis of such conditions must be due to external causes altering the influences of heredity.

A fragment of bone from a fractured skull pressing on the brain; lead sclerosis of the nervous system; an accident deforming the pelvis of a woman occasioning difficult labor, may so alter the evolutive processes as to render the offspring retarded in development with lowered resistance. If such be attacked by severe disease they may be invalidated entirely. If such survive and mix in marriage with normal or their like, posterity will of necessity be a retrograde variety of mankind manifesting abnormalities of every degree or kind in proportion to the extent and severity of the vulnerating agents. The range of defects as we have them today can be appreciated from a list given by Holt. That list conceives Degeneracy as an affection, the symptoms of which termed the "stigmata of degeneration" are divided into anatomical, physiological, and psychical, as follows:

Anatomical stigmata—Cranial anomalies: Facial asymmetry; deformities of the palate; anomalies of the teeth, tongue, lips or nose.

Anomalies of the eye: Flecks on the iris; strabismus; chromatic asymmetry of the iris; narrow palpebral fissure; albinism; congenital cataract; pigmentary retinitis.

Anomalies of the ear.

Anomalies of the limbs: Polydactylism; excessive length of arms, etc.

Anomalies of the trunk: Hernia; dwarfishness; spina bifida, etc.

Anomalies of the genital organs.

Anomalies of the skin: Polysarcia; premature grayness, etc.

Physiological stigmata—Anomalies of motor function: Walking late; tics; tremors; nystagmus; epilepsy.

Anomalies of sensory functions: Deaf-mutism; neuralgia; migrain; hyperesthesia; anesthesia; blindness; myopia; hypermetropia; astigmatism; Daltonism; hemeralopia; concentric limitation of the visual field.

Anomalies of speech: Mutism; defective speech; stuttering; stammering.

Anomalies of the genito-urinary functions: Enuresis; sterility; sexual irritability; impotence.

Anomalies of the instinct of appetite: Merycism; uncontrollable appetites for food, liquor, drugs, etc.

Diminished resistance to external influences and disease; retardation of puberty.

Psychical stigmata—Insanity; idiocy; imbecility; feeble-mindedness; eccentricity; moral delinquency; sexual perversion.

This list is incomplete; to do it justice with amplifications, volumes may be filled. A few more that may be added, however, and are of importance are these: Gout; Sachs's disease; the habit of bringing forth twins or monsters; a striking similarity in the formation of the face of blood relatives; and white specks on the nails.

It is being investigated experimentally by injecting toxins into eggs to ascertain whether a specific cause determines a definite stigma. So far it is known that environment, age, race, sex, and climate are determining agents. Different members of a family may show different stigmata. Different periods in life are characterized by different neuroses. Prostitution in female is the equivalent of crime

in male. So are visceroptosis and hernia; mucous colitic and asthma. Jews are free from the intoxicating neuroses and are less prone to commit suicide or homicide, but suffer more from other neuroses, especially morbid religious enthusiasm and racial egomania. (Of climate I have no experience.)

The stigmata are not of equal importance as marks of degeneration, their association and combination are the criterion. The relative values are exhaustively discussed in text-books, making it unnecessary to dwell upon them here. Aside from the intrinsic values, it must be distinguished between those which remain local and those which introduce by their existence a cause for systemic trouble. An extra finger is not so bad as hare-lip interfering with nursing. A simple neuralgia remains local, but a neuralgia of the nerves of general sensation perverting the appetite and creating a craving for poisons, for which a normal man possesses a natural reluctance, is obviously worse. Anomalies of the liver cells precipitating gout and its concomitant features are far from being so decisive as anomalies of the thyroid and para-thyroids. A minute anomaly in some apparently insignificant organ may bring on such disturbances through altered chemism that ignorant minds can attribute them to no other cause than the evil spirits.

For purposes of diagnosis and treatment, we may reason, until further data be advanced, that epilepsy may be due to anomalies of the inhibitory centers, motor centers, or to anomalies causing auto-intoxication. Affections like Grave's disease may not be due to anomalies of the thyroid only but to anomalies of other organs as well. So, all the phases of hysteria may not be due solely to anomalies of the emotional centers, but may in part be due to disturbances in metabolism, for anomalies always come in combinations.

On the other hand, many an organic disease is being overlooked because of the coincidental occurrence of a neurosis which is predominating. Recurrent appendicitis and chronic colitis are the most frequently overlooked. Sensory equivalents of Jacksonian epilepsy are taken for neuroses but are not, being caused by traumatism, and will not yield to internal medication. I know of a woman who is hiccupping several times during the day; she is neurotic, but the hiccupping is most likely due to adhesions of the gall bladder or stomach to the diaphragm. Hence the insufficiency of a diagnosis which calls a malady by the simple name of a "nervous trouble." It is essential to ascertain whence the trouble flows, from one or several sources. When an organic disease is found and stigmata of degeneration are present, we may be sure of an atypical course of the disease; according to the significance of the stigmata will the disease be deviated from the normal course.

The chief prophylactic measures are: the prevention of infectious diseases; the restraining of the hardened neurotic from procreating; the castrating of the pervert; the chloroforming of the useless; the stopping of the abuse of narcotics; surgery of the head; efficient and more free use of obstetrical forceps. Sermons and codes of ethics are jejune means of reforming, as proved by experience of thousands of years.

The principle governing the treatment of the neuroses is one for all the forms. Talipes, squint or hernia can be corrected most easily in infancy. Later, the best efforts sometimes fail. The same is true of all other neuroses or neurotics. Hence the importance of examining infants for marks of degeneration, to ascertain their temperaments and obtain an indication to the lives they are to live. There is a

chance in infancy to induce other organs to functionate for anomalous ones.

Such a torrent of words has been poured out by a class of degenerates in regard to the value of spiritual, religious and suggestion cures, that many a sound mind has been biased. Others not so well balanced have gone crazy over such mystic methods, which are corrupting like tangible narcotics and should be condemned. They have a baneful influence over centers hitherto unaffected; their power for good is equal to those of opiates in cases of surgical appendicitis, or to cancer pastes. They cannot be expected to cure ailments which are due to structural lesions, and all the neuroses arise from such conditions. The success of the Weir Mitchell rest cure is an incontestable argument against the demand of psychotherapy, metallotherapy, cobweb, etc.

The importance of hygiene is everywhere well recognized, but that part which relates to the intellect is utterly neglected. Mysticism is allowed at large, religious reveries are looked upon with equanimity. Every frenzied brain may be an author, every maniac may harangue the public, every feeble-minded, nimble-tongued woman may go unhindered and upset the minds of thousands predisposed. Humanity ought to be screened against such mad-men, and the filth of literature should be expunged before we can be expected to be ethical.

Man is an omnivorous animal, not so much that he can be nourished on all sorts of food, but that he will eat everything given to him. What we eat is either the cheapest or fanciest procurable, or what the ignorant restaurant man prepares for us. The physiological law—a proper combination of the various alimentary principles in a digestible form is essential for healthy nutrition—is disregarded. The consequences are, that we are steadily

hungry, crave for something, and at last fall on dope. It is true, a normal man may lay on fat out of cellulose, but the ailing will not thrive so well even on butterine. The sanitarium take advantage of these facts and make us believe that we cannot do the same thing by eating properly at home.

Practical education and absorbing occupation is essential for our welfare. The discipline of misfortune is not hurtful to the neurotic; strenuous life is beneficial. But it must not be confounded with a frenzied or debauched life for a strenuous one.

Alcohol and other narcotics are vile poisons for all neurotics, strychnia is hurtful, arsenic is not indicated, iron is of value, the hypophosphites are inert as ever. Bromides are used for all cases of excitation, but are everlastingly useless except in epilepsy. Antipyrin (not the other coal tar products) will do the work expected from the bromides. The iodides are alteratives par excellence, and are indicated in the neuroses. If they disagree, either an idiosyncrasy exists or they have liberated a poison which overwhelms the system for the time being. Hyoscyne is a useful drug, but is uncertain; it is with one a sedative, and with another an excitant. Asafoetida is a good and mild sedative. Purgatives do no harm as long as they are not prescribed with a bracer. Digestants and intestinal antiseptics are inert. Cannabis indica, gelsemium, and antipyrin are the anodynes to be made use of. In the neuroses of the uric acid diathesis, ammonia is a specific. Ammonium benzoate urotropin, piperazin and other uric acid solvents owe their action to ammonia. Whether it acts by regulating the alkalinity of the blood or by any other means cannot be said. Ammoniated tincture of valerian has a good quantity of ammonia and would do

good service if the alcohol in it could be eliminated.

Organotherapy is a most promising field. Extracts of almost every organ and tissue are now being prepared, but none is in any way comparable in its actions to the preparation from the thyroid. Even this has not come up to expectations; it was thought it would cure every condition due to anomalies in metabolism, but it does not. In some cases of sterility and obesity it relieves the conditions, in others it does not. This may be explained on the supposition that the conditions are due in one case to anomalies of the thyroid and in another to anomalies of other organs.

I said before that many an organic disease goes unobserved because of a predominating nervous condition. Gynecologists are alert to such possibilities, but as women are frequently nervous and as often carry an injury with them, a great confusion arose. One authority will attribute the manifestations to nervousness and the other to the injury. Reed claims to have cured a great variety of ailments by repair of the cervix; Kelly, on the other hand, states that operations for the repair of the cervix are the most useless gynecological procedures. It would be well if gynecologists could reconcile discrepancies, so that when we are consulted we will be uniform in our advice and thereby avoid criticism of our patients.

A nervous condition if complicated by an injury will get worse, so will the injury itself be reciprocally aggravated, if only apparently. Therefore, by curing one of the troubles the patient will not get the full benefit of a cure. An injury, if treated at all, a rapid method should be chosen; prolonged treatment is deleterious to the nervous state. Procidentia uteri when a part of general visceroptosis, if treated with pessaries, general condi-

tions will grow worse. If treated surgically, recurrences may follow, and the patient will not be relieved of symptoms because the prociencia is only a part of an extended anomaly. The good results

of surgical treatment are in part due to the rest, the proper diet, and the sanitary conditions of the hospital. The most successful treatment is that which follows a thorough knowledge of the case.

EARLY DIAGNOSIS OF GALL STONE DISEASE.*

JOHN EGERTON CANNADY, M.D., CHARLESTON, W. VA.

It is not my purpose to speak of the classic symptoms of gall stone disease in its final, sometimes hopeless, stages. With these we are familiar. The average textbook describes terminal stages and dead-house findings to the serious detriment of the patient. There is, relatively speaking, no such thing as symptomless stone in the gall bladder. If we inquire carefully into the past history we will find the symptoms in abundance. We had as well speak of a symptomless stone in the urinary bladder as in the gall bladder. Neither gall-stone colic nor jaundice are at all necessary to the diagnosis of gall-stone disease. The sooner we get over this fallacy the better it will be for our patients. The very earliest symptoms are often quite trivial in character and frequently referable to the stomach. There is a feeling of fullness, weight or distention in the epigastrium. This is both persistent and annoying. It is generally relieved by belching, and vomiting gives complete relief. Relief may be given by bending the body forward, by loosening the clothing, or by flexing the thigh or the

body. There is at times a little pain in the gall bladder region, at times a respiratory effort is cut short by a sudden, stabbing pain. There may be a slight chilliness in the evening with a goose-flesh feeling of the skin. These symptoms have often gone unrecognized. About every fourth woman past middle age, and a few less men, have gall stones.

By constant care as regards the diet, hygiene, and the use of laxative mineral waters, it is often possible for these patients to keep in a condition of comparative comfort. But if we wait numerous retrograde changes may take place in the liver, gall bladder, and pancreas. When the time for operative treatment becomes imperative the mortality risk is high and the technique of the work difficult. The early operation is easy, safe, and prophylactic. The question of removal of the gall bladder or its drainage is largely dependent on the practice of the individual operator as to whether he is inclined to operate early or late. The man who operates early will be able to cure most of his cases by simple drainage, while the one who waits for terminal stages will find his pathology so serious that removal rather than repair will be often an imperative indication.

*Abstract of Oration on Surgery, read before the West Virginia Medical Association at Elkins, October, 1909.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

RECIPROCITY.

WE have, from time to time, calls for information concerning reciprocity, which we have referred to the Secretary of State Board of Medical Examiners, who is the proper authority upon this question.

These calls are becoming more and more numerous, as members of the profession, who are contemplating leaving the State, realize the importance of this special feature of medical organization and interstate protection, and, as it becomes better known and more fully developed, it will prove a great advantage to all concerned, provided its provisions are strictly adhered to in every detail.

Dr. C. A. Abernathy, Secretary of the State Board of Medical Examiners, has been kind enough to furnish us with very full information on this important subject, which is herewith published, and for which we return our thanks.

The qualifications which are necessary to meet the requirements of this reciprocity agreement between the States herein named are simply, directly, and forcefully stated, and must be met.

A clear understanding of these is very necessary to those desiring to avail themselves of reciprocity in order to avoid mistakes, delays, and embarrassment.

We would call attention especially to Qualification III, as upon this will depend

the final certificate of the State Secretary. The reason for stressing this, is that certain applications have been returned because these provisions had not been complied with, and in fact, could not be.

OFFICE OF

C. A. ABERNATHY, M.D.,

Secretary State Board of Medical Examiners,
PULASKI, TENN.

Editor of JOURNAL:

As so many inquiries are made of me as to what States Tennessee has established reciprocal relations with, whereby licenses can be obtained under the reciprocity agreement established between these States, I desire to give through the JOURNAL the following information.

Tennessee holds reciprocity with Kentucky, Indiana, Georgia, Maine, Nebraska, Oklahoma, Wisconsin, Utah.

The basis upon which the exchange of licenses between these States has been established is as follows, to wit:

BASIS FOR RECIPROCAL MEDICAL REGISTRATION.

Qualification No. 1.—A certificate of registration showing that an examination has been made by the proper board of any State, on which an average grade of not less than 75 per cent was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the State where reciprocal registration is sought, may be accepted, in lieu of examination,

as evidence of qualification; provided, that in case the scope of said examination was less than that prescribed by the State in which the registration is sought, the applicant may be required to submit to a supplemental examination by the board hereof in such subjects as have not been covered.

Qualification No. 2.—A certificate of registration or license issued by the proper board of any State may be accepted as evidence of qualification for reciprocal registration in any other State; provided, that the holder of such certificate has been engaged in the reputable practice of medicine in such State at least one year, and also provided, that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the State in which reciprocal registration is sought, and that the date of such diploma was prior to the legal requirement of the legal examination test in such State.

Qualification No. 3.—As evidence of moral and professional character after graduation and licensure, each applicant shall present, from his former home, to the State Board in which registration is sought, satisfactory evidence that he has been, for at least one year, a member in good standing of the county, State, and national medical organizations of the school or system of practice to which he belongs, and a certificate of recommendation issued to him by vote at a regular meeting of the society in which his membership originated, that he is worthy of the benefits of registration anywhere, and such certificate shall be treated as a part of such application and considered in connection with the other evidence presented.

NOTE.—No application will be considered unless the diploma, certificate and fee accompany it. They should be sent by express, prepaid, to the Secretary of the State Board of Medical Examiners, Pulaski, Tenn. Fee is \$15.00.

Every blank should be carefully filled and the affidavit should be made before a notary or other

officer who has power to affix his seal. Physicians not in good standing in their respective county and State societies, and whose professional records are not above reproach, need not apply.

Residence Requirement.—The applicant will be promptly notified whether he is eligible for a certificate in the State of Tennessee upon the credentials furnished with this application, but no certificate can be issued under our law until he has become an actual, *bona fide* resident of this State.

As will be seen, the applicant for reciprocity license in these States must be a graduate from a reputable medical college in good standing, must have a certificate of license granted on an examination in which he or she has attained a general average of 75 per cent, must be moral and ethical, and must practice honorable medicine, and must not be an itinerant nor an advertiser.

Applications for reciprocity license must be made to the secretaries of the State from which reciprocity license is sought who will furnish all necessary information and the blanks which must be filled out.

While reciprocity has been established between these States, yet each reserves the right to accept the qualifications presented by the applicant, or to reject the same, if in their judgment the requirements are not satisfactorily made and met.

These requirements apply alike to all the States which reciprocate with Tennessee.

It is the desire of the Tennessee Board that reciprocity relations be established with more States, and we are of the opinion that it will be accomplished, as most of the States favor it, and the National Examining and Licensing Board will approve such a movement when a satisfactory basis can be determined upon.

C. A. ABERNATHY, M.D.,

Secretary State Board Medical Examiners.

BOOK REVIEW.

MEDICAL DIAGNOSIS. By J. C. Wilson, M.D.

Published by J. B. Lippincott & Co.

THIS comprehensive volume is divided into four parts:

First—Medical diagnosis in general, in which the various organs are considered and their medical anatomy is given.

Second—The methods of diagnosis and their immediate results, which include, among other chapters, one on physical diagnosis of the blood, the urine, the eye, and the use of the X-Ray in diagnosis. These features are handled in a most attractive and impressive manner.

Third—The signs and symptoms of disease, as manifested by an examination of the different organs. A most important and practical feature.

Fourth—The clinical application of findings, and the different procedures necessary to interpret diseased conditions is thoroughly considered.

The book is well written, the style being such as to fix and hold the attention throughout. While the various laboratory procedures of value in diagnosis are given and their usefulness fully explained, yet the clinical side is especially rich, and emphasis is laid on the fact that no laboratory procedure can outweigh the careful consideration of symptoms and the thorough examination of each case.

Among the numerous works on Diagnosis, this one will stand the test of careful scrutiny, and will well repay a thoughtful reading, as well as being a most useful book for reference.

W. C. D.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., DECEMBER, 1909

No. 8

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee Shelbyville.

C. H. DAVIS, M.D., East Tennessee Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D. Chairman, *Ex-Officio* Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan

GEO. H. PRICE, M.D. Editor, *Ex-Officio* Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D. Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D. Covington.

Alternate, J. D. BREWER, M.D. Newbern

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL:

A. B. COOKE, M.D., Nashville.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman* Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

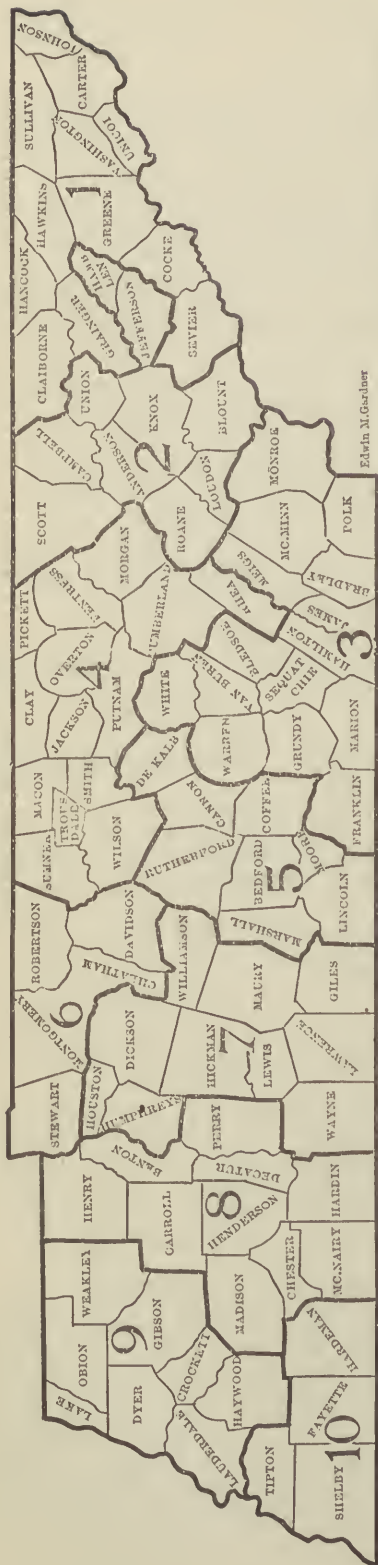
H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. McNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphls.

JERE L. CROOK, M.D., *ex-officio*.....Jackson.

GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLED SOE COUNTY.

President, J. P. BARNETT, M.D.....Plkeville.
Secretary, A. O. MEREDITH, M.D.....Plkeville.

BRADLEY COUNTY.

President, T. J. MCKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellco.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, F. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. McREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Moshelm.
Secretary, S. W. WOODYARD, M.D.....Greeneville.

HAMBLETON COUNTY.

President, W. E. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D.....Whitleyville.
Secretary, E. W. MABRY, M.D.....Meagssville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. McNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewistown.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

MORGAN COUNTY.

President, ————
Secretary, G. R. TODD, M.D.....Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.....Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, K. E. ROGERS, M.D.....Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. G. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, DR. L. S. TILSON.....Erwin.
 Secretary, DR. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmersville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

COUNTY SOCIETIES.

To Secretaries of County Medical Societies:

The office of Secretary of the County Medical Society, to which you have been elected, is the most important position in your County Organization, and in fact the County Secretary is the most important factor in the State Association, for upon him depends the success of the County Organization. No man should undertake the duties of Secretary unless he is ready to work for the good of his Society, and unless he is peculiarly interested, he should not enter upon these important duties. The Secretary is responsible for detailed data and reliable information concerning the individual members of his County Organization as well as other physicians in his County. He should keep a list of members alphabetically arranged, which list should give name, postoffice, county, date of graduation, date of license, Alma Mater, and date of joining the State Association. See form in JOURNAL No. 9, February, 1909. Every County Secretary should be familiar with the By-Laws governing County Organizations. The By-Laws of especial inter-

est to County Secretaries will be found in the Transactions of 1907, page 373. Chapters IX and XII, inclusive. I would suggest to County Societies that the office of Secretary and Treasurer be combined, for experience has shown that one man can do this work to greater advantage than two, and that many mistakes will be thus avoided. Every County Secretary should make it a point to know in person and keep in touch with every member of his local Society. He should, also, see that every member is notified of every meeting. Frequent meetings of County Societies should be encouraged. Programs should be arranged in advance and members notified as to what subjects will be discussed and who will discuss them. Every County Society should have a fixed place and date of meeting. If County Secretaries will become enthusiastic, their enthusiasm will permeate their County Organizations. The present indications are that this will be a most successful year, and a great part of the success will depend on County Secretaries. Let us have your best efforts.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., DECEMBER, 1909

No. 8

PRIMARY MALIGNANT TUMORS OF THE OSSEOUS SYSTEM.

W. H. BRYAN, M.D., NASHVILLE.

THE name osteo-sarcoma has apparently been misleading, since it has tended to convey an idea of structure rather than of origin. It is freely used to signify that the tumor originates from bony tissues, not that it must contain bone. This it may do; it by no means must. There appear in bones all the cell types of sarcoma, spindle, round, or giant. All degrees of density, too, are found in osteo-sarcomata, from the hardest to the softest, even cysto-sarcomata of bone have been observed. So the fallacy that osteo-sarcoma means a bone-containing tumor may be at once discarded, and the fact accepted that they may or may not contain bone substance.

Age Distribution.

Often and again have we all learned that sarcoma is essentially a tumor of youth, and have inferred that so it is not to be expected after the cancer age is reached. I have therefore gone over a large series of reports of osteo-sarcomata to draw some conclusion, unbiased by any man's opinion, as to the age distribution in this class. My ideas on the age of incidence of sarcoma in general have recently been shown elsewhere. Out of 77 cases taken from a series of monographs on sarcomata of the bones and periosteum the average was $33\frac{1}{2}$ years, the youngest was 9 years and the oldest 64 years.

One authority (Schwartz, "des Osteo Sarcoma des Membres") gives the number of cases occurring at nine decades, as follows:

From 0 to 10 years, 3 cases.
From 10 to 20 years, 45 cases.
From 20 to 30 years, 66 cases.
From 30 to 40 years, 30 cases.
From 40 to 50 years, 22 cases.
From 50 to 60 years, 16 cases.
From 60 to 70 years, 5 cases.
From 70 to 80 years, 3 cases.
From 80 to 90 years, 0 cases.

In the series I have had time to review, the number arranged in decades is as follows:

From 0 to 10 years, 5 cases.
From 10 to 20 years, 11 cases.
From 20 to 30 years, 18 cases.
From 30 to 40 years, 18 cases.
From 40 to 50 years, 10 cases,
From 50 to 60 years, 6 cases.
From 60 to 70 years, 9 cases.

This agrees very well with Schwartz' table and places a small percentage of cases under ten years of age and after fifty years. However, the number occurring after fifty years is probably much higher relative to the total population of that age than that occurring during any other decades.

The distribution of these tumors anatomically, while an unclarified is yet a very interesting study. First, it is known that they are far more frequently found in the long bones, and that they occur with greater frequency in the extremities of these bones. Second, it is known that while long bones are most affected, certain of these are attacked with far greater frequency than others.

These sites of predilection in the osseous system will likely remain inscrutable until the causative factors are better understood.

Again, we know how frequently the upper jaw is attacked and how rarely the sacrum. It is unwise, however, for us to fix too firmly in our minds the sites of preference, for there is no part of the bony framework which may not be affected and a conviction that sarcoma habitually confines itself to certain definite territory even in the majority of cases is likely to be very deceptive. A wiser plan is to study the diagnosis of sarcoma independently.

The cause of sarcoma is known only in so far as predisposing factors go. The one predisposing cause known is trauma. The severity of the trauma seems to have no influence; it is rather the fact that the injury shall be sufficient to cause healing activity among the connective tissue cells, which when favored by association with the real and unknown cause—it would perhaps be more accurate to say which favors the development of the real cause—favors tumor development. Tubercle develops better, if not only, in damaged tissues; carcinoma often after chronic irritation; sarcoma in half the cases subsequent to if not as a result of trauma. This is suggestive at least. The nature of the injury is often interesting. I recently removed a small (not osteo) sarcoma from the ear of a woman following a scratch by a brooding hen, one from a

leg, subsequent to an apparent mosquito bite, and a third from the leg of a man; and this last developed in scars made by the bite of a sow nearly thirty years previously; another followed a bruise produced by a cow butting the individual; another at the lower end of the femur immediately following the carrying of heavy weights; another to a bruise seven years before; another following a bruise made by a horse tramping on the foot two years before; another at the site of the injuries by bruise ten years previously; a fracture of the surgical neck of the humerus one year after, and a second fracture still three years later; another after two contusions of the knee six months and fourteen days previously, respectively. I have cited a number of cases to show the truthfulness of the above statement that the extent of injury is not important; hence many may have been preceded by forgotten injuries; and to show that the origin of the tumor or its precursory symptoms may date all the way from a few days to many years from the time of injury. Since men are more exposed than women, it follows that sarcoma is seen more often in the male. Since the robust are more subjected to the chance of injury than the frail, we see again at least one reason why sarcoma should be seen more often in the former, just as it is true the most active child is more likely to suffer from tuberculosis of the hip joint.

Sarcoma is essentially soft—that is, not osseous or cartilaginous—and when bone tissue or cartilage appears in the substance, that cartilage or bone is not what entitles the tumor to be classified as sarcoma, and contributes nothing whatever toward such classification. It may have by accident, *c. g.*, its site of origin an opportunity to contain these histological elements in sufficient quantity to render its consistency so hard as not to be differentiated from bone or cartilage, just

as an angio-sarcoma, may by its physical signs be indistinguishable from angioma. It is not the angio element that determines for or against its malignancy, but the presence of the malignant mesoblastic cells in the mass. So an osseous sarcoma, or an ossifying sarcoma is the result of a sarcoma undergoing such change within its substance. These are termed osteo-sarcomata; but much wider significance is embraced in that term—namely, that osteo-sarcoma means any sarcoma of any type arising from osseous tissues whether it be the marrow or the bone substance. Owing to inability to differentiate in a clinical way between sarcomata arising from the bone and those having their source in the periosteum and cartilage, osteo-sarcoma may be broadly applied to cover the whole group.

Inasmuch therefore as the soft tissue is the essential element even in osteo-sarcomata, it need not be surprising to find them often, even in the majority, made up of soft tissue. This fact may be discoverable by a superficial examination especially in those tumors arising outside of the medullary canal. Even in the intra-medullary type, as growth continues and absorption and thinning of the encircling bony wall progresses to obliteration at one or more points, the softness of the tumor appears.

Further than this, they often pulsate at each systole, are often pseudo-fluctuant or fluctuant, and may be distinctly cystic. The point, as I conceive it, that needs to be clarified is that because a tumor arising from bone is soft is nothing against the diagnosis of sarcoma, and if other signs agree would rather favor such diagnosis.

This same point is well understood by the radiographers, who depend for the value of their work on the difference in density of the tissues. A sarcoma in the bone substance or within the medullary

canal casts a lighter shadow than the surrounding bone.

The shape of osteo-sarcomata is amenable to the same laws governing their shape elsewhere; they grow along the lines of least resistance; not entirely, but sufficiently to give them a very varied form. The tendency, it seems, of sarcomata is to grow spherical; when growing beneath the periosteum or within the bone the lateral resistance encountered determines a more or less spindle shape unless, perchance, an early escape of some part of the tumor from its obstructive limits shall give it the privilege of alteration according to the new environment, and an increase in its rate of growth due to the diminution of tension. The tumor may if periosteal partially or completely surround the bone.

The above paragraph might be construed to mean that the lines of least resistance solely determine the direction of growth. That is, so far as is known, true. But the growth of sarcoma takes large and small planes, cavities, fossæ and fissures alike. I have recently shown elsewhere how a slender fibril will grow out from a sarcoma alongside a nerve or blood vessel, or through a small foramen or fissure until it reaches a favorable spot where it will develop as a tuber on the end of its stem. This is even carried to the extent of invading veins and growing along their lumina without producing visible change seen from the outer surface, as happens oftenest, perhaps, in hypernephroma. In sarcomata arising from the bony structures this same phenomenon is found on a miniature scale. They may grow from the medullary canal to the surface, or *vice versa*, through the smallest openings, or along the Haversian canals, lacunæ and canaliculi with no gross evidence that such has occurred. Therefore, nodules are found in the periosteum or under it that are due to a primary growth

within the canal, or a periosteal growth may come away smoothly and easily from the bone surface, show no evidence of invasion of the bone, and yet—the only question in my mind is if there is possibly an exception, and I doubt it—there be within the medulla a nodule or several nodules, to be left. These growths are not metastases any more than the potato is a metastasis from its vine; they are part and parcel of it connected by an invisible fragile thread of tumor tissue lying between. May I be pardoned for a digression just here. It is not unusual to find a primary sarcoma with a number of smaller more recent nodules situated closely around it, say within the area of a twelve-inch circle; these are called metastases. But it is incredible that emboli in the vessels should so often come back to the same spot whence they originated and settle down around the parent home. No, they are not embolic, they are not metastases; they are one by direct continuity of tissue with the primary manifestation just as the potato vine, with its roots and the attached potatoes, are one plant.

In all such cases removal of the primary growth, or part of it, with every visible secondary growth is of no value, for the invisible stems lie between and are left in a field whose favorableness toward the tumor growth has been enhanced by such mischief-making surgery. The periosteum is always to be considered involved in medullary cases, the bone and the medulla in all periosteal cases, and neither is to be attempted to be saved in either instance.

The initial symptoms of osteosarcomata are so variable as to be of small, aside from suggestive, value. The rule is that pain opens the scene. This in the limited number of cases tabulated has appeared to vary with the cell-types, as it was the initial symptom in fifty of a

hundred cases of giant-celled sarcomata, sixty of a hundred central spindle-celled sarcomata, and seventy-five of a hundred round-celled sarcomata. In the periosteal types the percentage average with pain as the initial symptom is slightly lower for the different structural types and the variation among these types is not so wide. "The intensity and character of the pain vary widely. At times it is dull, like that of a contusion and disappears for a while only to return afterwards. Again, it is lancinating. Certain patients attribute augmentation of pain to walking or to fatigue and have relative ease during repose" (Schwartz). Another case complains of neuralgic or rheumatic pains until the time the tumor manifests itself or a spontaneous fracture occurs. The chief value of this is that we learn that not every unexplained or obscure pain is neuralgic or rheumatic in origin, and further that a persistent pain affecting a certain structure or region if it be continuous or intermittent without definite explanation should warrant an exhaustion of the clinical methods to determine its character.

In some the intensity of the pain—pain before a tumor shows itself—is such that sleep cannot be had; and like certain other lesions in the bones, this may be exaggerated at night. Local heat may accompany the pain. When pain is wanting at the beginning of tumor formation, it is the rule that it starts during the progress of the tumor spontaneously or from extraneous influence, such as trauma, massage and such like. The entire absence of pain is not diagnostic, although it happens here far less frequently than in sarcoma of the soft tissues.

At its incipience a sarcoma, or what ultimately proves to be one at the time of operation, may be entirely indolent, and appear benign. This may last for more than twenty years and then, as a

result of some injury, seem to take on malignancy with all the active signs of such; on the other hand, the trauma may be absent and the alteration occur spontaneously as a part of the evolution of the growth. It seems from histological studies unwise to consider these tumors malignant from the beginning, but practically it is of value, inasmuch as it is utterly impossible to say when that tumor, however small, however old, however well behaved, will like a lightning flash break forth with the most malignant and malign activity.

The pain produced in this primary stage of sarcoma may last as much as two years before the appearance of the tumor mass, but the rule is that after the onset of pain, whether it be of the dull, aching type, keen, lancinating type, or of the pricking type, it is only a few weeks or a few months before positive evidences of tumor formation is at hand.

In reviewing the literature on the subject of osteo-sarcoma one is very forcibly struck with the number of times spontaneous fracture is mentioned. As is well known, this fracture results from a cause that under normal circumstances would be entirely inadequate for the solution of continuity of bone. As a rule it occurs from some very slight force—such as a turn, or an attempt to rise from a sitting posture, or going up the stairs, or a slight blow. This may occur before any tumor formation has been observed, and then there follows a very rapid growth of the tumor and accession of the pain at the same time. This increase in growth is probably due to the injury incurred since increased flow of blood to the part takes place, and that in as much as laceration of the tissues has been produced the outside resistance of the growth of the tumor is diminished and therefore that growth is accelerated. An interesting fact connected with this spontaneous fracture and de-

pending for its explanation on the fact that the fractures pathologically are spontaneous, is that here we do not find some of the signs most frequently useful in the diagnosis of other fractures. For example, in many of the cases the author simply states that the extremity is wobbly, or that there is undue amount of motion at the level of the tumor, or that there is somewhat of displacement. Crepitus they do not mention except in very rare instances; especially is this true in those cases where the tumor has grown from the medulla and so thinned out the bone that only a shell is left. These fractures often occur sometimes before the physician is permitted to examine the patient and the latter is unconscious that a break has been produced in the continuity of the bone; therefore they are likely to escape us, even when it is evident that a tumor is present, and have proven exceedingly difficult of diagnosis. In those cases where the tumor alone or the tumor plus the additional swelling has so covered up the bone that mobility is difficult to elicit, it is an exceedingly difficult matter for us to be positive that a fracture has occurred. In all cases where a fracture has been produced by an insignificant force, either direct or indirect, in an individual whose health has been good and whose osseous system shows no evidence of disease, we should always think of malignant tumors as the chief cause of such fractures, and therefore immediate steps should be taken to determine whether such is the case. Furthermore, a fracture brought about by the growth of a tumor in or around the bone, does not unite. Here again, if there is not an adequate cause explaining why delayed union or ununited fracture is present malignancy again should be thought of.

The general condition of the patient having sarcoma, whether it be of the osseous system or of the soft tissues is as a

rule good. The appearance of cachexia does not come as early in sarcoma as it does in carcinoma, but after it has put in its appearance the loss of vitality of the patient is exceedingly rapid and there is little hope of such a patient's recovery. The size of the osteo-sarcoma is just as the other factors entering into the diagnosis of the condition are, a very variable element. They are described all the way in literature from small up to enormous, but it is not the size of the malignant tumor that is of most importance, but the fact that it is a malignant tumor, for it is just as necessary to take care in a case that is just beginning as it is in one that has developed to enormous proportions; in fact, it is more necessary to act on small ones, because there is some hope of relieving them permanently, and but little hope in those that have gone on sufficiently long to be large.

The skin over the surface of an osteo-sarcoma depends for the changes that appear on two factors. In the first place the proximity of the surface of the tumor to the skin, and in the second place on the size of the tumor and the laxity of the tissues in which it appears. If the tumor reaches the skin surface or if it invades the skin, then there is almost certain to be discoloration; this will be red or purplish at the point in question. If the tumor is very large or if the skin lies close to the bone at the site of the extremity of the tumor then the skin surface becomes stretched and glossy. This, however, should not be of any great importance in the diagnosis of tumors and must be considered only as incidents to the environment. It is not unusual to find more or less edema in an extremity affected by a sarcoma, at or below the level of the tumor, due to interference of the return circulation by pressure.

In the very rapidly growing sarcomata,

especially and possibly in any sarcomata, there may be a rise of temperature that leads to the suspicion of malaria. As many of the other signs, this, too, is not diagnostic, but is one of the casual symptoms that, unless it is remembered, may mislead us into thinking that some other element is causing the fever.

When sarcomata occur in the region of the joint, quite frequently the joint is more or less flexed and its range of motion considerably limited, independent of the mechanical interference, the tumor produced on motion of the joint. It seems to act in this way much as an inflammatory process does, and either active or passive motion may produce severe pain in the joint when that motion carries the part beyond the limit to which it is flexed. Sometimes this flexion of the joint is observed even though the tumor is producing and has produced no pain. So much is this the case that these tumors are often mistaken and treated for joint disease, and it is easy to understand how any one could in certain cases make such a mistake.

Diagnosis—

I have been very much interested in noting the various conditions for which sarcoma has been mistaken. Most often it is confused with tuberculosis of the bone. Again for rheumatism, for inflammatory processes, for cysts of the bone, and for gummata. It can usually be distinguished from tuberculosis by the modern means at our disposal which determine the presence or absence of tubercular infection of the body; however, it is not impossible that the patient should have sufficient tubercular infection to produce a reaction to the tuberculin, and yet there be sarcoma in addition.

In those cases, since the clinical appearance of the two very closely resemble each other, at times there is no

means left to us to make a differentiation except to resort to the microscope.

In those cases where sarcoma is confused with rheumatism a thorough investigation will usually clear up the case, by showing other evidences of rheumatic conditions, such as the history and the appearance of the symptoms in first one joint and then another, or by other easily recognized factors.

The duration of pain in those cases that are mistaken for an inflammatory process and the intensity of it, as well as the appearance of the tumor which occurs more slowly than the swelling of an ordinary acute inflammation, together with the probable absence of early constitutional symptoms and the failure of the treatment directed toward the relief of the inflammatory disease, render it possible in most cases for us to differentiate this condition from sarcoma.

Cysts of bone occur so rarely, there being only thirty or forty cases on record, that we need not trouble ourselves very materially about differentiation of this kind, the supposition being in favor of sarcoma and against cysts. The additional fact that sarcoma of the bone may itself be a cysto-sarcoma renders it necessary that we be exceedingly slow in deciding that a given tumor of any bone is a simple cyst.

To differentiate sarcoma from gummata we may make use of the recently demonstrated Wasserman's reaction, which in the majority of cases will give positive evidence if syphilis has been present and has not been entirely eradicated from the system, and we may use active anti-syphilitic treatment for a few days or weeks and determine whether or not the tumor reduces materially in size under that treatment. If it does, the treatment should be continued; if it does not reduce in size, but, on the other hand, it increases as the treatment is continued, there is no

use to consider the possibility of gummata further. In this last means of differentiation between sarcoma and syphilis, I believe it is wise at the same time the iodide of potassium is pushed to give hypodermic injections of mercury, for syphilitic growth seems to disappear more readily when the mercury is given than if the iodides are given alone. This is well in keeping with the present conception we have of tertiary lesions. After the syphilitic poison has been eradicated from the patient's system it is not possible for gummata to form, besides it has been demonstrated that the spirochæte can be found in certain of the swellings, and mercury is the only remedy against these organisms.

The time that intervenes between the beginning symptoms of tumor and the application to the physician for relief necessarily varies with the type and activity of the tumor. The shortest time I have found was fourteen days. From this the period that intervenes between discovery of tumor and time of consultation of physician ranges on up to several years and often the appearance of the spontaneous fracture is the first thing that causes the patient to realize that it is necessary for him to consult a medical man.

The study of the prognosis of sarcoma of bone and sarcoma elsewhere is one of the saddest chapters in medical literature, for no matter what is done, the vast majority of these tumors recur, except in those where the most radical operation is offered and accepted long before there is a sufficient amount of pathology or symptomatology to cause the patient to realize the necessity of such work, and it is only by such procedure that we can hope to reduce the disease very materially.

Treatment—

The remarks I have just made cover

what is known of treatment—namely, their removal; not the removal of the tumor or of the tumor plus a little tissue around it, but a total removal of the structure in which the tumor appears. Dissection of the periosteal tumor leaving the bone, or removal of the bone affected with the tumor and leaving the periosteum, or the chiseling out of these tumors and leaving a portion of the bone, has been demonstrated time after time to be worthless, worse than worthless.

I believe that every case of sarcoma of bone should demand at the very earliest a total excision of that bone or amputation at the upper limit of that bone. The only possible exception I can see to this statement is in certain cases where it is considered ill-advised to amputate at the hip joint and where the patient's chances for recovery from the operation would be better if a lower amputation should be done, but we should always remember this fact, that the closer to the tumor we go the greater the chance of recurrence. The other exception is in those cases where the tumor appears in a bone that cannot be spared, and these cases I think are almost invariably hopeless, and I doubt seriously whether or not it is worth while to operate at all after the tumor is well developed.

In those cases which are not operable a small percentage are benefited by Coley's treatment, but only a small percentage, and yet this is the only hope we have to offer them. If we would make plain to our patients the fact that it is impossible for us to recognize early malignant elements in very small tumors and gain their consent to have these tumors removed before they have had time to invade the surrounding tissue, we would then be able to save many more lives than we are at present.

Three times within the last eight months I have removed sarcomata, the

largest of which was smaller than a Malaga grape, and none of them showed any evidences to my mind of malignancy; none of these were osteo-sarcoma, which are more difficult to recognize. It was only after incising the tumors that my suspicions were aroused as to their malignancy, and the suspicion was confirmed in each instance by a microscopical examination. One of them was a small nodule in the testicle, found accidentally while I was operating for another condition. It is due, however, to say that his physician had suspected the presence of sarcoma, and told me so. In the second case a small knot on the leg not larger than a bean was removed and was found to be a fibroid tumor, on the inside of which there were sarcoma cells. The third one I removed from the lobule of the ear. It was slightly smaller than a grape and proved to be sarcoma. I feel sure in not one of these three cases will there be a recurrence. I feel further sure that it would be practically impossible to operate on three cases of sarcoma that had developed to the size of one's fist without getting on an average of two recurrences. The point I wish to emphasize is this, that the suspicion of the medical profession should be aroused when a tumor is seen, and that the tumor should be removed on general principles, before it has had an opportunity to cause any mischief. I wish furthermore to emphasize that sarcoma is not nearly so rare a condition when the microscope is called to our aid as many of us imagine.

DISCUSSION ON THE PAPER OF DR. BRYAN.

DR. JOHN A. GAINES, of Nashville:

Mr. President: This paper of Dr. Bryan's is so excellent and he has presented the subject so thoroughly and admirably, that there is very little left to say further than to heartily endorse everything he has said, and possibly add a little of the same kind of evidence from my own experience. I quoted this morning part of a report

in regard to the question of cancer experiments. This same experimenter (Dr. Gaylord) at work at the Cancer Hospital, New York, found by injections and inoculations from rat to rat with cancer, that they grew more virulent in these cases, and he reports a series, I believe, of three cases after having reached between sixty and eighty re-inoculations in which the sarcomatous change began, and in a short time what had been sixty or seventy continuous cancer transmissions became sarcomatous. This was proven in cases in which gradual metamorphosis was found. In the first case microscopical examination showed only a few sarcoma cells with the predominating features of carcinoma. Gradually, after three or four or five injections, the growth took on its sarcomatous elements, producing typical sarcoma cells, involving the connective tissue, leaving out absolutely the endothelial elements.

This, of course, opens up a new field in regard to the characteristics of malignancy and opens up the question as to how different they really are, after all. One reason why we have almost always thought of sarcoma as a disease especially of early youth and childhood, frequently finding it in very young patients, is because of the malignant types of disease carcinoma is much less frequently seen in children than sarcoma, not that sarcoma is infrequent in elderly people, but carcinoma is much more frequently found in the middle-aged—that is, after twenty years of age. Sarcoma is much more frequent in those of older age than it is in young children. It is really not a disease of childhood, but it attacks younger patients more frequently than does the typical carcinoma, although the latter has been found early. Pardon me for suggesting again in regard to the unmanifested symptoms of malignancy in these tumors. I reported a case some years ago in which I operated for a pelvic condition. It was a case of acute appendicitis, in which there were cystic ovaries. The ovarian tumor gave no pain. I removed the ovary, which was about three times its normal size, but which absolutely gave no symptoms. On examining the structure, its appearance to me was very suspicious. I excised it widely, taking away all the broad ligament possible, and up close to the uterine cornu, and making a much wider dissection than I would do in a case of benign tumor. That tumor showed in its center quite a considerable area of a complete change to a sarcomatous growth.

DR. M. A. BEASLEY, of Hampshire:

I do not rise to discuss the subject of sarcoma any more than to suggest to the profession the propriety of having these tumors immediately investigated when they are at all suspicious.

Last October a gentleman, Mr. E. K., from the city of Paducah, who was a friend of mine in our boyhood days, came back on a home visit. I accidentally met him in the city of Columbia, and he remarked to me he wished I would look him over and advise him about his condition. This patient had a considerable hydrocele, which he had been led to believe was the serious trouble with him. When he presented his case to me, I made a local examination. I was somewhat surprised, too, from the history he had given since he had been treated by more than one physician for hydrocele, without being warned of what might be a more serious trouble. On closely examining the patient, I could plainly outline a tumor upon the inner aspect of the left testicle not larger than a peanut. This was painful upon pressure. Having a very limited experience in this line of work, and an unsatisfactory one so far as the medical treatment of hydrocele is concerned, I suggested operation at once for the hydrocele, and also warning him of the danger that he might be running from this tumor, suggested that its nature could be more positively determined at the time of operation. I advised him as best I could, and for some reason he put really more confidence in what I told him than I expected, and within ten days consented to operation. I brought him to St. Thomas Hospital, and Dr. Bryan operated on him, and by the assistance of Dr. Litterer, to whom we are under obligations, we, at the time of the operation, found this tumor to be round-celled sarcoma. We then removed the testicle with as much of the cord as we could get outside the inguinal canal. He left the hospital in eight days after the operation, and has since remained in perfect health.

DR. CHARLES P. McNABB, of Knoxville:

The subject of malignancy of tumors is an interesting one, and it is certainly one that we should talk and think about. This morning I quoted statistics of cases of cancer in the Prussian Hospitals, showing that in about twenty thousand autopsies, they found $2\frac{1}{2}$ per cent had cancer of the stomach, to say nothing of cancer of other parts of the body. When we think about it, this is appalling. It is time for the profession to look into the subject and recognize these growths

early enough and remove them before general systemic infection has occurred.

As to sarcoma, this was an interesting experience that Dr. Gaines mentioned. Carcinoma develops from the epiblastic and hypoblastic tissue, and sarcoma from the mesoblast.

There is a difference or variation in the structures from which they develop, which may account for their structural dissimilarity, even though they are of a common etiology which is extremely probable. For example, the common colon bacillus has produced acute suppurative cholecystitis, likewise appendicitis and local and general peritonitis. Who, then, shall dispute the right or authority of the cancer cause (I will not say germ) to produce a somewhat different picture when rioting in different embryonic or histologic structures.

Dr. BRYAN (closing the discussion):

I frequently hear it said in Nashville and other places, Don't you think your idea of the frequency of sarcoma is exaggerated? I do not know whether I have exaggerated ideas or not regarding these tumors, but I have seen thirty or forty cases of sarcoma in the last eighteen months. Sarcoma and carcinoma are tumors that should be considered seriously, and whenever we have a tumor that is at all suspicious, let us look into it. Of course, it is better, financially, for the surgeon, that the patient wait until the tumor gets big, then remove it and get a big fee, but for the patient it is better for the tumor to be removed as soon as possible. That is the lesson from a study of these tumors.

So far as the cause is concerned, my idea about the etiology of malignant tumors is that they are due to infection of some type—that is, by a parasite of some type.

NEURASTHENIA.

J. W. STEVENS, M.D., NASHVILLE, TENN.



NEURASTHENIA, or chronic nervous exhaustion, is an exceedingly common affection among us because of the rapid pace of our American life, and because of this frequency, which is no doubt increasing, and because of the fact that it produces some of the most distressing cases of invalidism that we meet, I hope that a brief discussion of the subject will not be uninteresting to you. It is my purpose to here speak only of *acquired* neurasthenia, as distinguished from the *congenital* neurasthenia of the French. The last is classed by Kraepelin and his followers with the *constitutional psychopathic* states, and, while it is impossible to draw a sharp line of definition, there being border-line states tending to merge the two, there can be no doubt but that this differentiation is proper.

The authorities seem to be quite generally in accord as to the etiology—viz., that the condition is due to excessive mental application, or strain, without adequate

rest and restoration of nervous energy. The first of these is commonly expressed as *overwork and worry*. "Excessive mental application" and "adequate rest" are relative terms only, dependent for their interpretation upon the resisting powers of the individual. That amount of mental energy daily and indefinitely expended with impunity by one man will bankrupt another, because the one inherited more nervous capital than the other. Again, the same amount of work, as expressed in results, may be done by one man with the expenditure of much less nervous energy than by another, because of the temperamental differences of the two. Heredity and temperament, then, play very important parts in the etiology of this disorder, the one determining the amount of nervous capital with which the individual begins life, the latter, the rate of its expenditure to purchase given results.

Generally unhygienic modes of life, lack of proper and sufficient food, and chronic

illnesses, are common causes or potent factors in the development of neurasthenia. The two former may explain its great frequency among the Russians, with whom it is nearly as common as with us, while Woodruff declares that the excessive sunlight of the tropics, and not the heat, explains its frequency there among the imported white. No age is exempt, but the greater number of cases arise between the ages of twenty-five and forty-five, that period of life of greatest activity. The clerical and professional callings furnish the greatest number of victims.

SYMPTOMATOLOGY.

The symptoms may be grouped as:

(a) Mental.

(b) Physical.

In this, as in all other diseases, a set description of the symptoms will not fit every case. In some the mental symptoms will predominate; in others, the physical. So true is this that not infrequently those functional disorders of the gastro-intestinal tract and genitalia, which are really a part of this state, long elude correct diagnosis.

Let us briefly review first the mental, and then the physical, symptoms.

The neurasthenic state is most happily indicated by the term "nervous exhaustion," the diminution of nervous energy present leading to a host of functional disorders, physical and psychical. A heightened consciousness of self is one of its first manifestations. This comes about by reason of changes in the kinesthesia incident to the lowered nervous potential and the resulting inefficacious functioning of the various organs. The individual no longer feels up to par, that he is possessed of the same resiliency, and that he has his usual vim and vigor with which to meet the battle of life. The insufficiency of his bodily functions, the sensations of weariness, etc., that he finds upon him al-

most invariably bring about a state of depression and despondency. He becomes self-centered and preoccupied with the state of his health. He is discontented and unhappy, and this matter of the state of his health comes to be the dominant thought in his mind. In the severer cases this usually becomes so marked that the patient can think or talk of little else. He takes a pessimistic view of his condition, and believes himself to be much worse off than he really is. He is introspective and constantly on the watch to find in himself signs and symptoms of disease. The importance of any abnormality that really may exist is greatly magnified and exaggerated, while many others are imagined which really do not exist at all. The confirmed, extreme, neurasthenic is completely out of gear all over, and not an organ in his body, to his belief, properly functionates. Some particular set of symptoms, sensations, or ailments always occupy the position of chief importance, but the patient is constantly on the watch for, and constantly discovering, new complaints and disorders. The slightest abnormality in his sensations or appearance is sufficient to at once arouse the belief that this or that organ or function is gravely impaired. A real abnormality is not necessary at all to bring forth this melancholy conviction, common, everyday, purely physiological phenomena being often so misinterpreted. The vasomotor disturbances and sensory disorders common to the disease, give rise to a host of complaints, these symptoms being misinterpreted by the patient as being evidences of all sorts of grave and serious diseases. Cold feet are an infallible sign of an impoverished state of the blood and serious disorders of the circulatory apparatus; a headache portends some brain or spinal affection; dizziness means approaching apoplexy; watering of the eyes is a premonition of oncoming blindness,

etc. This condition, known as *hypochondriasis*, not infrequently progresses so far as to establish true somatic delusions and is the most distressing feature of the malady.

The solicitude of the patient regarding his condition is oftentimes truly pitiful, and, because of the multiplicity of his complaints, their iteration and reiteration at every opportunity make these patients tax the ingenuity and try the patience of the physician more than that of any other class with which he has to deal. On the other hand, some seem to derive a melancholy pleasure from their invalidism, while others are most selfish and exacting.

Irritability is a frequent and early symptom and often becomes extreme. First manifested in response to the cares and annoyances of business, professional or domestic life, as expressed in an increase of worry and fretfulness over things that do not go just right, it may progress to such a point in the severer cases as to make the individual almost unbearable because of his faultfinding, fussy, chrochetyness. Noises are particularly distressing to such patients, and in their exactions regarding silence, as well as many other things, they are oftentimes exceedingly unreasonable. Reasonableness, however, is rarely a highly developed virtue in the neurasthenic.

Mental insufficiency is nearly always prominently marked. One of its most common manifestations being the patient's irresolution and inability to reach decisions, be the matter under consideration of the most trifling importance. Even though a decision be reached, not infrequently the potential of energy is too low for its execution. He is easily fatigued mentally, quite unable to perform his usual, or normal, amount of intellectual labor, and abandonment of busi-

ness is the universal rule in the well-marked cases.

Memory disturbances are nearly always complained of by these patients, who declare their inability to recollect facts and names with their former facility. Some true amnesia does exist, but this is always much exaggerated by the patient, so that in real fact his memory is much better than he believes it to be.

Many other *subjective* mental symptoms occur, such as a feeling of dullness and stupidity, inability to maintain the attention, persistence of certain ideas (rudimentary obsessions), a failure to get hold of the right word or name on the instant, etc., which phenomena, while generally due to the mental insufficiency characteristic of the disorder, may oftentimes be but little removed from the normal, but are exaggerated by the patient into the evidences of present, or imminent, grave and distressing disorders.

PHYSICAL SYMPTOMS.

These are multitudinous, and no organ or function of the body is exempt. To undertake to delineate all the physical disorders of which the neurasthenic may complain would be an almost endless task, and not a profitable one, so that I shall but briefly discuss the more important ones, and but indicate, in a general way, the others.

Insomnia is one of the earliest, one of the most persistent, and one of the most distressing to the patient, of all the symptoms of the disease. Not infrequently effect is here confused with cause, the insomnia being wrongly looked upon by the inexperienced as the cause, instead of the effect of the malady. This symptom will almost invariably characterize the condition throughout its course until convalescence is well established, as to whose advent its amelioration may be looked upon as a portent. A very annoying feature of

this symptom is the not infrequent fact that during the day, while the individual is trying to occupy himself with some task, he is overwhelmed with sleepiness, only to find himself wide-eyed and staring when he seeks his couch. The rarely occasional case is met wherein the opposite state from insomnia exists, and the individual sleeps entirely too much.

Cephalalgia is practically universal. A feeling of pressure, fullness, or constriction, is rather more common than that of a positive "ache." The latter, if present, may be localized at the occiput, the parietal, or the frontal region, or may be diffuse. It is generally worse in the afternoon or evening, and is made worse by efforts at application. I have had several patients complain that the sound of their own voice reverberated through the head as in a bell, so that it sounded distressingly loud and booming.

Vaso-motor disorders are practically always present, and give rise to a great variety of symptoms, such as hot and cold "flashes," localized areas of subjective heat (a sensation of heat about the face and head is very commonly complained of), or of cold, cold extremities, localized sweating, etc. The blood supply to the extremities may be thus definitely diminished, as shown by their blanched appearance.

Sensory disorders are multiform, so that pains are complained of here and there, and in this or that organ. Tender points along the spine have been looked upon as almost diagnostic. These may be at the coccyx (coccydynia) or sacrum, but more frequently at the point of insertion of the lumbo-sacral muscles. These points are both tender and painful, the pain being increased by standing and often relieved by the recumbent posture. Paresthesias, sensations of lifelessness or stiffness of certain parts are very common.

Gastro-intestinal disorders play an im-

portant role in the symptomatology, are early in their appearance, and varied in their manifestations. A "nervous dyspepsia," with its stubborn refusal to yield to the usual remedies, medicinal and dietetic, may long proceed the other symptoms of neurasthenia. It is quite impossible to here undertake a description of nervous dyspepsia, since there are many types, and much has been written upon the subject. Suffice it to say in the words of Osler, which are used by him with reference to the other visceral symptoms as well as these: "There is a striking lack of accordance between the symptoms of which the patient complains and the objective changes discoverable by the physician." Constipation is the rule.

Various and many *visceral pains* cause much distress and apprehension to the patient, and only too frequently lead to inadvised surgical interference through a failure of their proper interpretation.

Muscular weakness is commonly manifest, showing itself in a flabbiness of the muscles and an increased susceptibility to fatigue. Enteroptosis is an occasional sequel of this muscular state.

The *special senses* come in for their share of the subjective disorders, and invariably there are complaints of abnormal functioning in the sphere of one or more of these functions—defective vision, roaring in the ears, disturbances of taste, and a thousand and one other sensations of departure from the normal, which, in the magnified importance lent them by the patient, are the occasion of much apprehension and anxiety to him.

PROGNOSIS.

The prognosis will depend very largely upon how completely the exciting cause can be removed. To a large extent these have their root in the necessary and unavoidable struggle for a livelihood, and since it is only a comparative few that

will be able to voluntarily abandon their vocations to seek the necessary rest and treatment, and since the ultimately forced abandonment of work will not afford the desired conditions of restfulness and ease, because the victim will be constantly confronted by the reminders of his inefficiency and helplessness, the prognosis in the poorer and less well-to-do classes is unfavorable. With those so situated, however, that the proper and necessary conditions of life may be obtained, and who come under treatment reasonably early, the prognosis is distinctly good, a fact which I wish to emphasize particularly, and which is my chief motive in the presentation of this paper.

The degree of hereditary predisposition must, of course, be considered, and in those with a distinct neuro or psychopathic tendency, the prognosis will be less favorable.

Treatment—

The first step in the treatment must be the removal of the cause, if this be discoverable and still acting, which will mean many things, from surgical intervention to relieve an old chronic osteomyelitis, to moral precept and teaching to the man who does not know how to live. By reason of the fact that in a sanitarium can be afforded so much more satisfactorily the regularity of regime, rest, constant supervision, and the minute attention to detail so necessary in the successful treatment, a residence therein should be advised when the finances of the patient will permit. Travel and diversion are productive of good results in some cases, but are contraindicated in the majority, and their indiscriminate suggestion have worked much harm. Rest is of the first importance, and must be both mental and physical. In our endeavor to attain the former, our ideal should be the establishment of a mental state of placid-


ity and content, unfortunately, only too difficult to secure. Freedom from the cares, worries, and anxieties of business affairs must be afforded, as should, also, all other sources of irritation. According to the severity of the case, rest in bed for eighteen, twenty, or even the whole twenty-four hours daily should be ordered, the sluggishness incident to which is to be overcome by massage. Abundant feeding of nutritious, easily digested food is of the next importance, and should be pushed to the limit of assimilation, close attention being meanwhile paid to the eliminative functions. Of drugs, probably every one in the pharmacopea has been advised. None are specific, and the same principles must guide us here in their use as would elsewhere. Bitter tonics and ferruginous preparations will be of most importance. The multitude of symptoms presented must be met as indicated. The bromides given as a routine will be found valuable in many cases for their calmative, as well as soporific effects. Stimulants should be avoided. Hypnotics will be required for the insomnia nearly always present. For this hydrotherapy is much better than drugs because of the lack of after effects, and generally quite as efficient. The thousand and one aches, pains, and perverted functions complained of by the patient will tax the ingenuity of the physician to the limit. To entirely ignore them is both impossible and unwise, but care must be exercised not to lend to them an undue importance, and thereby increase the tendency to invalidism. In meeting their multitudinous requirements electricity, massage, vibration, hydro-therapy, leuco-therapy, etc., are of the utmost value, and if not positively beneficial, are at least in moderation, not hurtful. While this sounds like cynicism, it is really of the utmost importance, for these patients must and will be *treated* for all their many complaints, and when this demand

has its origin only in the hypochondriacal anxiety of the patient, and not in the true exigencies of the situation, it behooves us to at least not make our patient worse by our efforts at his cure. Suggestion, then (for to such is due much of the efficacy of these last mentioned measures), is of great value here, as it is

throughout the practice of medicine, and manifold in the methods of its application. Its most effective and successful use depends upon the man at whose hands it is employed, which brings me to my final statement, that the personality of the physician is the factor of greatest importance in the treatment of neurasthenia.

SPREAD OF TUBERCULOSIS.*

S. M. MILLER, M.D., KNOXVILLE.

F late an active campaign is being made for the control and cure of tuberculosis. The practical deductions from a present review of the situation is, first, to limit or prevent the invasion of the ranks of the uninfected; second, the relief of the unfortunates already afflicted. Whatever has been attained in the way of positive benefit to those suffering from tuberculosis will not be considered, but reference made only to the more important subject of the prevention of its spread among the healthy.

It seems strange the most important advances in medicine, in the past, have hinged upon the simple question of cleanliness. Epidemics have been stopped, infections have lost their virulence, and a way is being pointed out for the emancipation of the race from such scourges as typhoid fever, venereal diseases, yellow fever, that under consideration, and many others, by this simple knowledge. It has taken the profession a long time to learn this, and the very simplicity of the fact renders it difficult of acceptance as a working conviction. How easy it would then appear to stop the reign of tuberculosis, and put it in the list of past mem-

ories, by separating the healthy from the unhealthy, or by preventing the diseased disposing their infective excreta where it can effect others.

The effective application of such an expedient, so apparently facile, is the great desideratum of the present stage of the conflict. Two phases of the question present with conspicuous emphasis: the education of the laity, and the discipline of the diseased. The first is being managed, possibly, as well as can be, but much difficulty arises in connection with the latter. Every physician will, no doubt, acknowledge the hesitancy with which a patient, or his friends, admit the presence of the disease. It is almost a rule for them to offer every kind of apology and explanation for symptoms which could hardly be misinterpreted. So strong is this disinclination that the physician is often half way tempted to join in the deception. Another disposition almost characteristic of tuberculous patients is an extreme indifference to the safety of those with whom they come in contact.

With this view of the situation, the most important consideration hinges upon the patient's early knowledge of his ailment and the restrictions placed upon his subsequent conduct.

In dealing with most contagious and infectious diseases a more or less hearty co-

*Read before the Knox County Medical Society, November, 18, 1909.

operation is offered by organizations of public economics. The strong arm of the national civic power, the health authorities of the States, and municipal boards all join in doing the reasonably best thing in dealing with most contagious diseases. Quarantines are established, commercial intercourse interrupted, sanitary imperfections forcibly corrected and preventive measures instituted. All this appears an harmonious move in the right direction, but unfortunately, with reference to tuberculosis, much of all this is only apparent when applied to the management of such matters in Tennessee.

It can hardly be allowed the State officials are indifferently informed of the prevalence of tuberculosis or of the position of the medical profession with reference to its control, yet there is being maintained a condition which largely renders ineffectual the best efforts being used by the latter. The national government, and many of the individual States have experiment stations for the improvement of the character of our domestic animals, and for the selection and development of the cereal food products and fruits—hatcheries, for stocking waters with esculent varieties of fish, are common establishments, but our State takes an advanced stand, over all, in having a well-equipped tuberculosis culture and distributing agency. It requires but the simple statement to convince you there could be no added factor to render more efficient the present prison system in this field of enterprise. In every county's substation (jail) throughout the State, degenerates are gathered together and housed and kept for months under the most favorable conditions for acquiring tuberculosis, and finally many are sent up to the State central station, where the environment, if possible, is still better fitted to this end.

One of the present prison physicians furnished me what he represented as offi-

cial statistics, showing that twenty per cent of convicts, on admission, are infected with tuberculosis. Just how many of these acquired the disease in the county jails would be difficult or impossible to ascertain, but as an average time of the detention prisoners in the jails is about one year, and as such culture field is so admirably adapted and fertile, the statement of the prison physician, being here quoted, that the unusual number of tuberculous subjects in the main and branch prisons can reasonably be traced to the county jails, is probably entirely correct. This report farther shows that eighty-five per cent of all deaths in main and branch prisons are due to tuberculosis. This varies somewhat from a report made to Gov. Patterson by Dr. Head, as published in the papers, that a fraction over ninety-eight per cent were due to such cause. As remarkable as all this may be, it does not begin to show the ugliest aspect of the case. Still quoting from the statistics mentioned, the total number of prisoners on hand, in main prisons and branches, December 1, 1908, was 1,775, and of this number, for two years, there were discharged 983. It was impossible to learn just what per cent of this number discharged were tuberculous, but from the "humanitarian" rule of discharging prisoners when they become inefficient as working factors, and of the "generous" custom of sending the poor devils home to die, the number would be quite large, to be sure. At stated intervals the prison physician reports the list of incompetent to the prison commissioners, showing the number hopelessly sick, and such are almost uniformly pardoned. The discharged consumptives go to their homes, in every part of the State, reeking with infection, to spend their remaining time among a part of the population uninformed of the danger, and poorly provided to avoid it if it were known. The limit of

harm they do is not confined to persons of their kind. They are an open menace to the community at large, and serve in a measure to defeat any effort being made for the limitation or spread of the disease.

Why is a course like this permitted, in tuberculosis, that would not be allowed in any other contagious disease? Is it because the State authorities are not informed on the subject, or that sick prisoners are unprofitable? Or is it a mistaken impulse of the better side of human nature?

It would be an undertaking of too great magnitude to suggest such prison reform as would correct, in any measure, this evil,

but it would not be unreasonable to demand of the law-making authorities proper prison hospital facilities for the care of these cases, as a matter of protection to the people at large; and to hint to the pardoning power the wisdom of maintaining a discipline over these subjects, otherwise impossible to effect. In case of most contagious diseases, free citizens are restrained by quarantine laws from mingling with the healthy, but in this instance prisoners are deliberately sent out to spread infection wherever they chance to wander. No criticism is too severe for so unwise a practice. It is not an overdrawn statement to designate the prisons of the State Culture Stations for the Propagation and Distribution of Tuberculosis.

THE MANAGEMENT OF TRANSVERSE PRESENTATIONS IN LABOR.*

J. B. MURFREE, M.D., MURFREESBORO.

THE mechanism of labor is a most wonderful process, and in a remarkable manner demonstrates the adaptation of means to an end.

The product of conception lies within the uterine cavity, growing day by day (yet imperceptibly), becomes the embryo, and later the living fœtus. The whole time of its sojourn within the maternal parts it is nourished by the placenta and is protected from external violence by the firm uterine walls and the surrounding tissues. When it reaches a definite period of its existence and its further development ceases, it is expelled by uterine contraction as a living human being.

Why this should be so we do not know, farther than it is the universal law of nature.

At the beginning of labor, the position of the child *in utero* determines (with some exceptions) what the presentation of the child shall be when it enters the pelvic cavity.

In the later months of pregnancy, the fœtus assumes a position of attitude which is characteristic and forms an ovoid mass which adapts itself to the shape and contour of the uterus.

This characteristic position is produced by the growth of the child and the means of accommodation between it and the uterus.

The relation which the long axis of the fœtus bears to the longitudinal axis of the mother determines the presentation, and consequently as the result of this relation we have a longitudinal and a transverse presentation.

In a transverse presentation the long axis of the fœtus lies directly across the

*Read by title before the Tennessee State Medical Association at Nashville in April, 1909.

abdomen of the mother, the head lying in one of the *iliac fossae* and the breach in the other.

In transverse presentations the shoulder occupies the superior strait of the pelvic cavity, and constitutes the presenting part. A transverse presentation is a rare occurrence, being less frequently met with perhaps than any other. The causes which produce a transverse presentation are many and are due to many different conditions: some maternal and some fetal.

"The existence of a transverse presentation in a primiparous woman is *prima facie* evidence of a lack of accommodation, usually the result of a disproportion between the size of the head and the pelvis. In some instances it may be due to hydroncus. In multipara, on the other hand, the most frequent ethological factor is an abnormal relax of the abdominal and uterine walls, the result of repeated child-bearing, which may be still complicated by any of the causes already enumerated."

In multipara a transverse presentation is not so serious, from the fact that when labor sets in, the uterine contraction often converts into a vertex or a breach presentation. Yet a spontaneous conversion of a transverse position into a normal one may be hindered by a premature rupture of the membranes, a contracted pelvis, a *placenta previa*, etc.

In a transverse presentation, the diagnosis is usually made with but little difficulty. The contour of the abdomen is irregularly shaped and the uterus is lower, and there is a hard lump to be felt in one of the *iliac fossae*, when by the vaginal touch the presenting part can generally be recognized.

When the diagnosis is made we are then confronted by a condition of affairs where manual interference becomes absolutely necessary, or else the mother and child resigned to their fate, for spontaneous de-

livery is impossible in the vast majority of cases. In some very rare instances the child has been born without artificial aid, but these cases are so very few that such an event cannot be looked for in any case. Spontaneous version and spontaneous evolution does sometimes take place where everything is favorable for such a change. Prognosis in shoulder or transverse presentations are always serious and is to be determined by the stage of labor and the early institution of artificial means of relief.

If manual interference is made early, before the membranes have ruptured, and the shoulder is impacted into the pelvis, the prognosis is favorable for saving the child and still better for saving the life of the mother. But, on the other hand, when after labor begins and a spontaneous version does not occur within a few hours, and if proper operative measures are not instituted, the result to the mother and the child is fatal, the child dying of asphyxia, the blood supply being cut off by pressure upon the cord, and the mother succumbing to hemorrhage or infection, the result of a rupture of the uterus, or, in some instances, perishing from exhaustion. In this connection I beg leave to report the following case:

In February of the present year I was called to see Mrs. S., aged 39 years, who was in labor. The patient was a stout, healthy woman, who had lived a maiden until about a year ago, when she was married, and soon after her marriage she became impregnated. The pregnancy pursued a regular course, up to the onset of labor. When I saw her, she had been in labor for three days, being attended by three physicians, all of whom were present on my arrival. From the physicians I learned that she had been in labor for three days; the labor pains had been very active, but ineffectual farther than dilat-

ing the os uteri, which process had much exhausted the patient.

A vaginal examination revealed a relaxed condition of the vaginal walls, the os being fairly well dilated with the chest of the child presenting anteriorly, and both hands were lying outside of the os, in the vagina and within easy grasp of my hand. The head lay in the right iliac fossa, while the hips were in the left, and the chest and left shoulder were firmly impacted into the pelvis.

The attending physicians recognized the presentation and had made frequent attempts to turn and deliver, but failed.

I introduced my hand with great difficulty into the uterine cavity (the parts were so tightly wedged into the cavity) and with some difficulty I felt with my finger the os pubis and later was enabled to reach one of the knees of the child. When I endeavored to pass my finger behind the knees, so as to make traction upon it, I found this impossible, as there was a firm cutaneous band binding the leg to the thigh almost down to the ankle. The attempt to turn the child was impossible, without doing more violence to the maternal parts than I thought was justifiable.

The woman's condition was critical, the child was dead, and the anxiety of her friends very great. Under these circumstances I determined to resort to evisceration. One of the physicians present seized both of the child's hands and made forcible traction upon them, while another made pressure upon the head through the abdominal walls, and the third administered the anæsthetic.

I introduced a bivalve speculum up to and within the os, in order to protect the maternal parts from injury. Then passing a pair of Smellie scissors through the speculum, I perforated the thorax of the child and broke up the viscera. Now, withdrawing the scissors, I passed a finger

through the thoracic walls. I was enabled to reach the diaphragm, upon which I made traction, and the body began to double upon itself and soon I was enabled to hook my finger under the os pubis, and by exerting some force soon delivered the hips and lower extremities. But, to my surprise, at this stage, the advance in the delivery of the fœtus was stopped and the head became firmly impacted in the pelvis, and only by a firm, continuous and prolonged traction upon the body and limbs of the fœtus was it delivered.

There was large hydrocephalus, which accounted for the delay in delivering the head. The left leg was bent upon the thigh and firmly bound to it by a cutaneous band down almost to the ankle.

An ocular inspection of the parts revealed but slight laceration of the perineum and vaginal walls. A bichloride vaginal douche was administered, followed by a normal saline solution, the patient dressed, the bedding changed, and the patient placed in bed in a weakened but comfortable condition. The patient made a fairly good recovery.

The treatment of a transverse presentation is necessarily by artificial means; for if left to the process of nature for delivery, death to the mother and the child is almost certain. Except in very rare instances it is impossible for the uterine contraction to expel the child while thus bent upon itself. While it is true that in some very exceptional cases delivery has occurred without any artificial aid, yet these cases are so very few that, ordinarily, they cannot be taken into account.

The means resorted to for the artificial delivery of the fœtus in a transverse presentation are those manipulations which tend to bring the long axis of the child parallel with the long axis of the pelvis. These means vary with the circumstances attending the labor and the condition of

the parts maternal and foetal. The means usually resorted to are:

First: Cephalic version.

Second: Bipolar version.

Third: Evisceration.

Fourth: Decapitation.

Each one of these procedures is adapted to the state of the labor, to the position and the condition of the presenting part, to the condition of the uterus, as to the capacity of the pelvis, and the length of labor.

In the last month of pregnancy, if the diagnosis is satisfactorily made, the approved treatment is cephalic version, by external manipulation and by a properly fitted binder, the child being held in this corrected position until labor begins.

This opportunity is rarely ever offered, as this class of cases does not usually come under our notice until labor has already commenced. After labor has begun, and the transverse position is clearly recognized, the ideal treatment is by internal podalic version. In these latter cases, when the membranes rupture, there is usually a prolapse of a hand or the shoulder presents and is crowded down into the pelvis. In this condition, if the cervix is well dilated, the hand should be gently introduced into the uterus and passed along the surface of the child until it comes in contact with a foot, which should be seized and brought down into the pelvis and by gentle traction upon it, the child delivered, meanwhile giving ample time for the uterus to fully dilate.

Podalic version is the approved method in those cases where the membranes have recently ruptured, the os dilated or dilatable, and the strength of the woman good. But in those cases where the woman has been in labor for two or three days, the membranes long ruptured, and the presenting part is packed tightly down into the pelvic cavity, with the os fully dilated, this method of delivery is imprac-

ticable and any attempt at version is contra-indicated.

Decapitation is the method especially recommended by authors in these cases and is the means generally used. But under these conditions, in my opinion, decapitation is objectionable.

From the fact that when the head has been severed from the body, and the body delivered, there still remains in the pelvis the head yet to be delivered, which is always difficult to do, as it is deprived of the body, which acts as a handle to the head, by means of which it could be more easily delivered by traction through the body.

In severing the head from the body, often rough and pointed pieces of the bone remain at the point of severance, which, in the delivery of head, would lacerate the os and the vaginal walls, thereby creating avenues for the entrance of septic material.

To deliver the head after its severance from the body is difficult, as the force of the contracting uterus does not bear directly upon it, and expulsive force must be reinforced by some external means of traction. Again, it is often difficult to succeed in introducing the fingers into the mouth of the child, or to get a blunt hook into the foramen magnum, and as a last resort, sometimes, you will have to resort to the crushing of the bones of the child's skull by the cephalotribe in order to complete delivery.

All these manipulations within the uterus and the pelvic cavity tend to increase a tendency to infection.

In those cases of long-delayed transverse presentation, the operation of evisceration is to be preferred to that of decapitation, from the fact that it more readily accomplishes the delivery of the child with less injury to maternal parts.

Cæsarian section has been recommended in these cases and would be the proper

treatment could it be done early and under favorable surroundings with proper sanitary environments.

In conclusion, let me emphasize the necessity of prompt action in the management of transverse presentations. When the diagnosis is satisfactorily made, and the os uteri is dilated, or even dilatable, the hand, properly aseptized, should be gently introduced into the cavity of the uterus, the child turned and delivered.

Delay here means death to the child and possibly also to the mother. The efforts

of nature are futile and cannot be relied upon. When the presenting part becomes firmly impacted into the pelvic cavity, all efforts to turn and deliver should be abandoned, even though this procedure should entail the sacrifice of the life of the child. Here, evisceration or decapitation should be done, and the child delivered without any delay, whether it be alive or dead at the beginning of the operation.

Under these conditions we are justified in sacrificing the child in order to save the life of the mother.

THE MORTALITY AND MORBIDITY OF APPENDICITIS.

CHAS. N. COWDEN, M.D., NASHVILLE.



INFECTIOUS inflammation of the vermiform appendix has occupied the attention of the medical profession for many years. It has been discussed and debated at hundreds of society meetings, furnished a theme for scores of books by good, bad, and indifferent authors, not only on this side of the waters, but the other side as well, till it would seem that everything possible had been said and written, and the subject closed for good and all time. But the subject will not down because the mortality of the disease not only in the country districts, but the metropolitan centers, is yet inexcusably too high. Or if the patient does not lose his life, he is left many times in a semi-invalid condition from the morbid effects of the disease, that require months and years to recover from, if at all.

It is not enough, gentlemen, to save the patient's life; but he is entitled to perfect and permanent relief from this most destructive malady that is agreed by all to be a curable disease, and this idea so well grounded in the minds of many members

of the profession that it is a curable disease is the one thing above all, that remains to keep the mortality so high, or the morbidity so far-reaching in its harmful effect.

We still have many physicians who are enthusiastic in their belief that they can and have cured many cases of the disease by some favorite method or procedure, forgetful of the fact that more than eighty per cent of all cases will get well, independent of whether the patient had or did not have any or all kinds of treatment.

But the very important question arises here, "Does the patient get well?" I mean by this, do all patients who do not die from the acute attack, recover fully and have no symptoms referable to the morbid condition that is bound to follow in the wake of a severe, or even a moderately severe case of inflammation of the appendix, such as multiple adhesions, flexures, stenosis, etc., that cause many forms of nervousness and digestive disturbances.

A slight investigation upon our parts will convince the most skeptical that such is the case.

Now, if it be true, that the mortality rate is yet high and the morbid changes which take place are still unrelieved, let us stop and consider what are some of the factors that are responsible for this high mortality and many of the pathological conditions found.

I believe it is conceded by all to be a surgical disease, and this conclusion has been reached, not from a scientific investigation of the disease, but from a purely empirical standpoint, reached after a thorough trial of one and all of the so-called conservative methods of treatment.

The patients have been purged, narcotized, packed in ice, baked in poultices, starved and allowed to almost perish with thirst. Their leucocytes gazed at through the barrel of a microscope, glycogen tests applied, the urine assiduously examined for albumen and many other things employed, and yet with all this study, and all our examinations, this little organ the size of a quill, two or three inches long, has doomed thousands of suffering humanity to an untimely end, and to prevent this untimely end, nothing has proven so satisfactory as an early diagnosis and the transferring of the appendix from the abdomen to a bottle. Then the ideal treatment is found, as both internist and surgeon agree that practically one hundred per cent of this class of patients not only will not die, but will get well with every vestige of pathology removed, if the diagnosis and operation is done in time.

Then the failure upon our part to make an early diagnosis of acute appendicitis, forms the most important factor entering into the mortality of the disease.

I believe that most of you will agree that acute appendicitis in the greater majority of cases is easy of diagnosis, even in the earliest stages. In every sudden abdominal pain, the strong probability of appendicitis should be borne in mind, and no

other diagnosis considered until this disease can be definitely excluded.

This disease is so prevalent, the cases observed by every practitioner so numerous, that one can but wonder at the continuous stream of pus-bearing abdomens that is pouring into the hospitals. Every physician has had one case of severe acute appendicitis which may have caused difficulty in diagnosis, has referred it to the surgeon, stood beside the operating table, and observed a highly inflamed appendix, perhaps gangrenous or perforated, removed. All this is impressed upon his mind, and yet in a short time, he is called to see another patient in the throes of appendiceal colic. Knowing full well what all this will lead to, he falters, temporizes and dallies till the right iliac fossa becomes "ripe," filled with pus, before operation is advised.

The three cardinal symptoms, pain, tenderness and muscular rigidity, are found in every case, and are plain, unquestionable signboards in the early hours of the disease, and if misinterpreted, the occurrence of peritonitis, though local in extent, will at times confuse the best clinician. The lack of the application of a little forethought or care in eliciting the history of the attack, or the neglect of the use of the only instrument of precision in the diagnosis of the disease, the palpating hand of the practitioner, is responsible for the fatalities or for transforming a simple case into a serious one.

Again, gentlemen, if the hemocytometer and microscope are used to diagnose appendicitis, and their importance exaggerated as much as it was a few years ago to the exclusion of clinical methods, then, indeed, will your mortality and morbidity be on the increase.

Furthermore, if the laboratory is relied upon to determine the time of operation,

then will there be a still higher rate to record.

I do not wish to be considered as being opposed to these scientific aids to practical medicine, but rather as objecting to the exaggeration of their importance in the diagnosis of this acute surgical disease at a time when an operation promises a nearly absolute cure. To sit quietly by and wait for a leucocyte count to run above 20,000, which is, I believe, considered the minimum to diagnose pus for a certainty, would be in many cases a serious mistake, for your patient should have been operated upon ere this, and a spreading peritonitis forestalled.

The above trio of symptoms are not only present in every case of appendicitis, but in the majority of cases, markedly so, and their significance should never be underestimated or misunderstood.

The next factor that influences the mortality as well as the morbidity is the time of operation. The first question after the diagnosis has been made is that concerning the method of treatment to be adopted. We are face to face with a condition, not a theory, because the issue of an attack of appendicitis cannot be foretold with even the slightest amount of assurance, neither can the nature of the pathological lesions of the appendix be deducted from the clinical manifestations.

In appendicitis we face the very probable consequences of the disease, suppuration, gangrene, and perforation of the appendix with all the accompanying lesions of the peritoneum. To delay operation until there is certain evidence of the presence of pus, and we have no pathognomonic sign of such, is in the majority of cases unjustifiable by any course or reasoning, and in some cases almost criminal.

Another frequent and by no means small factor in determining or affecting the morbidity and mortality of appendicitis,

and one that is the hardest for almost every practitioner to learn, is the abuse of purgatives. I say abuse, for there is no place in the treatment of this disease for the use of purgatives. The literature upon this point is teeming with protests against them, and the experience of every practitioner is dotted with small mounds, monuments, as it were, testifying to his failure to learn this lesson, though purchased at so great a cost to human life.

Where did the idea come from, any way, that this was a condition that could be relieved by purging, when the very first principle of the treatment of inflammation—rest—is violated? Every effort of nature to limit the field of infection is overcome, and the danger is very much increased by the violent peristalsis produced by the irritating property of the cathartics. The only value in the Oschner method, and it is of great value in certain stages of the disease, is the limiting or inhibiting peristalsis till nature can throw out a limiting wall of adhesion and stay the progress of the rapidly spreading infective material.

Every surgeon knows and has too often realized, that when these cases of hyperpurgation come to the operating table, almost every chance of recovery is gone, and it is time for us to speak out and say that this desperate condition is not due to the disease, but to our own blind, stupid ignorance and failure to recognize the awful work of our innocent hands, that I might almost charge are bathed in the blood of the trusting victim. It seems to me that every one of us has been warned upon this subject, and why we do not learn the lesson is one of the unsolved problems of modern medicine.

After the mortality of the disease has been considered and the factors that render the patient's condition serious, calling for prompt radical measures such as operation in the late cases or taking the

more desperate chance of the Oschner method of treatment, the patient escapes with his life, and now let us consider the actual, the probable, or the possible condition in which the patient is left.

The first conditions of morbidity that confront the patient are those due to the inflammatory changes that have occurred in the region of the appendix, such as the organization of the plastic exudate into bands of adhesion. Acute intestinal obstruction from these bands are fortunately for the welfare of the patient, very rare.

Following the evacuation of a large abscess cavity the exudate that has served the useful purpose of restricting the spread of the infection, becomes a menace to life from its tendency or liability to be organized into connective tissue, that later results in contraction enough to cause partial or complete obstruction of the bowels. If these adhesions do not give disastrous results necessitating an immediate operation, they very naturally interfere with normal peristalsis, and at times are attended with severe obstipation or fecal impaction. "Walled off by the efforts of nature" is an expression that is often used by the physician as a term of congratulation. But it also denotes a most fertile condition for future intestinal morbidity.

Chronic or relapsing appendicitis is another one of the conditions that is not infrequently met. The proportion of cases that have but one attack, remaining perfectly well after its subsidence, is so infinitely small compared with those that have repeated attacks with long intervals of semi-invalidism, that it almost establishes the rule that once having appendicitis, the patient either has repeated relapses or continued referred symptoms, till they are driven to the knife, not as a life saver, but as an escape from the unpleasant symptoms.

The presence of pus is by no means in all

cases attended with mortality, but is almost of necessity the producer of morbidity, and both are much diminished if the operator is experienced in the handling of this class of cases. The final results or the salvation of these cases lie in proper drainage with protection of the healthy peritoneum during and after the operation. Successful drainage depends upon a sufficient amount of gauze properly placed with rubber or glass tubes in the abscess cavity or pelvis. Gauze that does not drain is more harmful than beneficial. The thicker and more purulent the fluid, the less gauze and more and larger drainage tubes should be used.

The later management of the gauze or tubes is in many cases a very important factor in obtaining results, and can only be determined from close observation in each individual case. The time and method of its removal are to be considered. In many cases the tendency is to remove too early, and a slight disturbance or shifting of the gauze will increase the drainage very materially. The tendency is to remove the gauze too early because the adhesions which form about are broken up by its removal, but it is not of any consequence if it is slight shifting. To entirely remove a gauze drain or tube at the end of twenty-four and sometimes forty-eight hours, is to remove every hope that the patient has of recovery.

Knowing just when to remove is a matter learned after much experience, and a mistake is often made, then, by those of wide experience and ripe judgment.

No other procedure yet devised has been of as much value in these cases of suppurative peritonitis as the upright position suggested by W. R. Fowler to limit by gravity the spread of the infection to the general cavity. The Fowler position, aided by the use of Murphy's enteroclysis, has been one of the greatest steps forward

in robbing this desperate condition of many of its victims.

Long, tedious recovery following drainage cases, with the anemia attending the suppurative process, is not all the patient is subjected to, and that is the safe healing of the incision. Experience has taught us that these scars are frequently the seat of ventral hernias. Even with asepsis and primary healing of the incision, the physiological processes such as pregnancy and an increased weight that sometimes is taken on after middle life, render these scars subject to tension and hernia is the result. How much more, then, would we expect an infected wound that had allowed separation of the facie, to be followed by this condition that in nearly every case calls for another and more extensive operation.

A few of these cases will, however, recover permanently with no pathology left, but who can tell just which case you can depend upon to terminate so favorably, and how long would you wait for such a happy termination?

Associated with the presence of chronic appendicitis, there are in nearly all cases evidences of intestinal indigestion, discomfort, or pain increased by exertion, and referred particularly to the right iliac fossa, with an occasional mucous diarrhœa. Indisposition or debility characterize these patients and not infrequently neurasthenia is an associated condition.

Just whether this form of dyspepsia in the widest sense of the term, induced by chronic appendicitis, leads to autoinfection, and thus disturbs the nervous equilibrium that results in a mucous colitis, is a theory that you do not have to elucidate very, very much, till it becomes quite plausible.

Robert T. Morris, in a recent article, calls attention to a fibroid degeneration of the appendix, in which there is a gradual replacement of all the structures of

the organ with fibrous material. It is claimed by him that irritation of the nerve filaments in the contracting connective tissue causes reflex irritation of the intimate ganglia of the bowel wall, with the consequent derangement of function both of secretion and excretion. He explains many of the morbid conditions as being due to this factor, any of these patients will suffer enough to make it worth while to have the appendix removed, because of the influence upon the general health that it is having, instead of the danger of a recurrence of an acute relapse.

The practical part of my paper then, gentlemen, knowing full well, as all of you do, that mortality and morbidity follow in the wake of practically every case of appendicitis, the question arises, What shall we do to still further diminish these already too prevalent conditions, or is there an ideal treatment of practically no danger, that will prevent both mortality and morbidity as stated above and concurred in by both internist and surgeon? We are dealing with a surgical disease, hence surgery, and not drugs, or special methods, are to be thought of in its treatment.

The principle may be stated that in every case of appendicitis that is seen early, operation is indicated regardless of the mildness of the attack and regardless of the severity of the attack in the absence of a rapidly-spreading peritonitis. This, I believe, is accepted by all. But why not go a step further, and accept the conclusions of Munford—*i. e.*, do not coquet with any infected appendix; cut it out and you will never regret it.

I will only here use a few statistics. Cases operated on in the first forty-eight hours yielded no mortality; on the fifth day, twenty per cent died; on the sixth day, thirty-three and one-third per cent; on the seventh, twenty per cent, on up to the end of the second week, fourteen per cent. Now, who can tell whether a full

one hundred per cent of them would not have died if left alone. The mortality of the later cases cannot be ascribed to the operation itself, but is unquestionably due to the inferior condition of your patient at the time of the operation. Death does occur after the operation, and in spite of it, but certainly not on account of it. Operation fails to save in some cases, but it cannot be said to materially hasten the inevitable end. Operation in these desperate cases becomes a conservative measure instead of a radical procedure, as thought by some.

Of course, operation is not indicated in those cases of diffuse peritonitis in which the abdomen is distended, the temperature extremely high or low, the pulse rapid and with high tension, expression pinched and anxious, abdominal excursions absent, bowels constipated and unable to expel flatus, and with continuous vomiting, skin cold and clammy, etc. In this type of cases, the patient is moribund, in a state of col-

lapse due to overwhelming toxemia, and operative interference or anything else, will be followed by a fatal termination. But just remember, there was a time when this patient could have been saved, and I cannot imagine any one, be he doctor or surgeon, waiting in cold blood for pus and peritonitis, to try a method he knows will fail in twenty to twenty-five per cent of all cases, according to our best statistics, before demanding that all cases be cured by an immediate operation the moment a diagnosis is made.

Our waiting has caused many deaths, and will cause many more, if persisted in. To sum it all up, we only lack conviction to stamp out the mortality as well as the morbidity. I want to prophesy that the day is not far distant when both doctor and layman will demand operation the moment a diagnosis of appendicitis is made, unless contra-indicated by some intercurrent disease.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.

B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.

GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Elghth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Elghth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

COUNTY SOCIETIES, OPEN MEETINGS.

THIS important matter is called to the attention of the County Officials, with the hope that each County Society will take advantage of this suggestion to inform the public of the intentions and purposes of the organized profession in this State. It would prove of great good and material help to the people to get them interested in the questions involved in this movement, and it is to be hoped that they will be invited to meet with the physicians and discuss these.

AMERICAN MEDICAL ASSOCIATION,

Bureau of Medical Legislation.

OPEN MEETINGS OF COUNTY, DISTRICT AND OTHER
LOCAL MEDICAL SOCIETIES.

(Extract from the Minutes of the House of Delegates of the American Medical Association, Atlantic City, N. J., June 10, 1909.)

WHEREAS, The American Medical Association, not only as one of its declared purposes, but by numerous lines of activity, many of them connected with the Section on Hygiene and Sanitary Science, stands committed to the education of the public with respect to the nature and prevention of disease; and,

WHEREAS, The demand for such popular education with respect to tuberculosis, cancer, typhoid fever and other decimating diseases has become urgent; therefore, be it

Resolved, That all county, district and other local medical societies be, and they are hereby, requested to hold annually one or more open meetings to which the public shall be invited to attend and participate and which shall be devoted to a discussion of the nature and

prevention of disease and to the general hygienic welfare of the people.

It was moved that the resolution be adopted.
Seconded and carried unanimously.

GEORGE H. SIMMONS,

General Secretary American Medical Association.

To the Auxiliary Legislative Committee of the American Medical Association:

GENTLEMEN: I beg leave to advise you and, through you, the medical profession of your county, that at a meeting of the Committee on Medical Legislation of the American Medical Association, held at Chicago on October 16, I presented my resignation as a member of that committee to become effective November 15, 1909, or sooner, on the appointment of my successor.

This step has been made necessary on my part, first, because my surgical practice makes it imperative that I decline all engagements that may take me away from my office and operating room, and, second, because the duties of the committee have grown until they can no longer be discharged by any man who cannot devote, if not all of his time, at least more time to them than is consistent with my obligations to my clientele.

I must, however, ask for the privilege of tendering a few final words before I can accept exemption from further sacrifices incident to relations that I have sustained with pleasurable devotion for the last seven years. During that time, by virtue of its splendid organization, the medical profession has been able to assist in the accomplishment of important reforms. Among these reforms may be mentioned the improved status of the medical profession in the governmental organization of the Isthmian Canal Zone, the reorganization of the Army and Medical Corps, the passage of the Pure Food and Drugs Act, the recognition by the government of the heroic services of physicians, the defeat and resulting retirement from office of important personages whose influence

was inimical to the welfare of the people along lines represented by the medical profession, the promotion of a sentiment in behalf of State licensure in medicine and the preparation of a model act to that end, the education of the public on questions of medical legislation, the development of a strong public demand for the creation of a broader and stronger national public health service, and, finally, the development of an organization by which the influence of the entire medical profession can be brought to bear on great questions of legislation and public policy.

It is to be remembered, however, that all great reforms have been and must be effected to the embarrassment if not actual injury of unworthy interests that are thereby prompted to efforts at retaliation. Such efforts are in progress at the present time. Unworthy and discredited manufacturers of impure, adulterated and misbranded foods, fraudulent drugs and spurious liquors are today conspiring with certain equally unworthy and discredited members of the profession to blacken the character of its honored leaders, and thereby disintegrate its organization. The paid representatives in Congress of selfish and sinister enterprises, the jealously ambitious members of the public services outside of the medical profession, together with the ignorant and venal pretenders in medicine, are endeavoring to break down the reforms by which they have been adversely affected. In this way the Pure Food and Drugs Act is being insiduously annulled by vicious interpretations that are foreign to the purposes of the people and the Congress in enacting the measure. An effort is being made to resubordinate the medical service in the Isthmian Canal Zone to authority that has no technical qualification for the supervision of its functions. Discredited officials are endeavoring to re-establish their power. Ignorance and super-culture, allied under the guise of cults, are endeavoring to break down the medical practice acts of the States. Mercenary and merciless enterprises, antagonistic to the welfare of the people, are conspiring to defeat the movement for a national department of public health.

To overcome these antagonisms, to maintain the reforms already realized, and to accomplish other reforms, the necessities for which are flagrantly apparent in our national life, is today

the first obligation of the medical profession both to the people and itself. Its natural guardianship of the public welfare cannot be ignored or evaded. It can discharge that duty only by an intelligent *esprit du corps* made effective through the instrumentality of far-reaching, well-disciplined and courageous organization. To this end the officers and committeemen of our national body should be unstintingly supported in their altruistic work; the State associations should be strengthened; but, above all, the county societies, the units of strength and efficiency, should exemplify in the highest degree the principles of complete organization and disciplined coöperation.

After a consensus has been reached on any question in any county, every member should become the teacher of the public on that question in his respective locality. The public intelligence thus enlightened, public conviction may find expression in public action, if need be at the polls. The medical profession must carry weight, not only by the wisdom of its councils, but by its actual power with the people as the natural conservator of their physical welfare and their normal efficiency. In the exercise of its prerogatives, the county medical societies should hold open meetings to which the public are invited and before which questions of profound general concern should be discussed and appropriate action taken. These questions should pertain to every phase of protection against disease-producing influences in water, food, habitation and personal hygiene. The whole agitation, while not disregarding the defense of existing reforms, should, however, be largely concentrated in the immediate future in behalf of action by the Congress to establish an improved national public health service—a measure which, in every form of practical legislation, I am authorized to state has the cordial support of President Taft.

With deepest gratitude that I have been permitted to act as an humble servitor of my profession in carrying out some of these reforms and with assurance that nothing but the inexorable demands of my practice and of my obligations in life could induce me to relinquish the work yet to be done by and through the matchless organization of the American Medical Association, I am, very sincerely,

CHARLES A. L. REED.

60 The Groton, Cincinnati, Ohio, Oct. 26, 1909.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., JANUARY, 1910

No. 9

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee..... Shelbyville.

C. H. DAVIS, M.D., East Tennessee..... Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D.... Chairman, Ex-Officio Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan

GEO. H. PRICE, M.D..... Editor, Ex-Officio Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D..... Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D.... Covington.

Alternate, J. D. BREWER, M.D..... Newbern

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL:

A. B. COOKE, M.D., Nashville.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman*..... Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

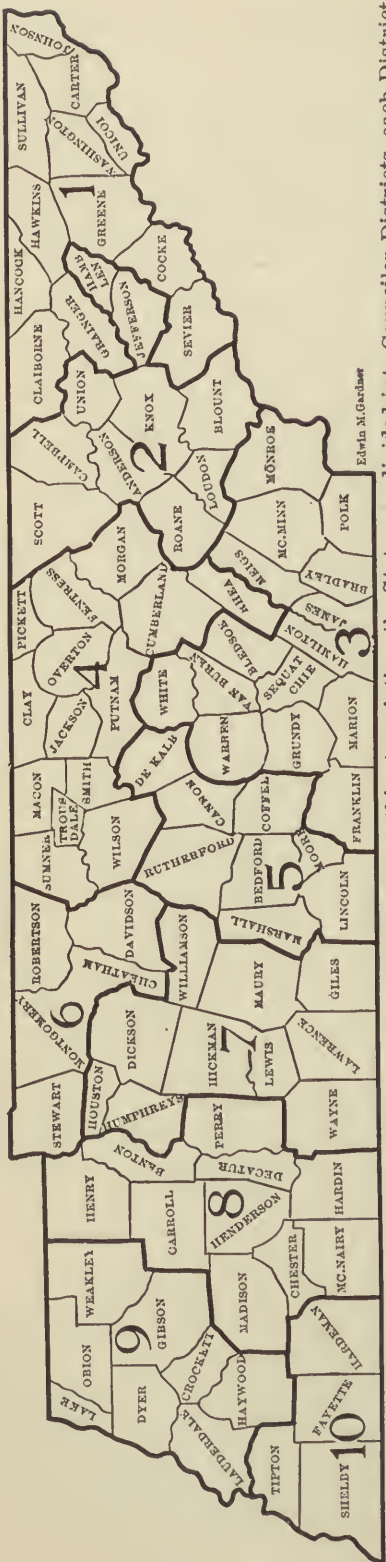
H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greenville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSE COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CLAIBORNE COUNTY.

President, M. B. CARR, M.D.....Tazewell.
Secretary, B. M. DAVIS, M.D.....New Tazewell.

CHOCKETT COUNTY.

President, D. A. REVILLE, M.D. Maury City.
 Secretary, S. E. McDONALD, M.D. Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D. Nashville.
 Secretary, H. M. TIGERT, M.D. Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D. Smithville.
 Secretary, W. B. PARKER, M.D. Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D. Dickson.
 Secretary, W. S. SCOTT, M.D. Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D. Dyersburg.
 Secretary, E. L. RAWLES, M.D. Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D. Galloway.
 Secretary, COMPTON N. CROOK, M.D. Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D. Humboldt.
 Secretary, W. C. McREE Trenton.

GILES COUNTY.

President, W. E. WILSON, M.D. Pulaski.
 Secretary, JAS. K. BLACKBURN, M.D. Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D. Mosheim.
 Secretary, S. W. WOODWARD, M.D. Greeneville.

HAMBLEN COUNTY.

President, W. E. HOWELL, M.D. Morristown.
 Secretary, T. L. SMITH, M.D. Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D. Chattanooga.
 Secretary, H. P. LAHIMORE, M.D. Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D. Middleton.
 Secretary, ROBT. W. TATE, M.D. Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D. Brownsville.
 Secretary, JAS. L. EDWARDS, M.D. Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D. Lexington.
 Secretary, C. H. JOHNSTON, M.D. Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D. Como.
 Secretary, J. H. MCSWAIN, M.D. Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D. Centreville.
 Secretary, JNO. S. BEASLEY, M.D. Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D. Waverly.
 Secretary, J. T. COOLEY, M.D. Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D. Whitleyville.
 Secretary, E. W. MABBY, M.D. Meigsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D. Jefferson City.
 Secretary, B. M. TITTSWORTH, M.D. Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D. Knoxville.
 Secretary, S. H. HODGE, M.D. Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D. Tiptonville.
 Secretary, J. D. ALEXANDER, M.D. Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D. Ripley.
 Secretary, W. D. MILLER, M.D. Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D. Kelso.
 Secretary, J. M. CULLUM, M.D. Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D. Loudon.
 Secretary, T. J. HICKMAN, M.D. Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D. Jackson.
 Secretary, E. K. McNEIL, M.D. Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D. Chapel Hill.
 Secretary, T. E. REID, M.D. Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D. Mt. Pleasant.
 Secretary, M. M. COOK, M.D. Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D. Madisonville.
 Secretary, J. E. DAVIS, M.D. Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D. Clarksville.
 Secretary, J. C. MORRISON, M.D. Clarksville.

MORGAN COUNTY.

President, A. S. WILTSIE, M.D. Lancing.
 Secretary, G. R. TODD, M.D. Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D. Mason Hall.
 Secretary, JAS. F. DARNELL, M.D. Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D. Livingston.
 Secretary, W. A. REED, M.D. Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D. Isabella.
 Secretary, K. E. ROGERS, M.D. Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D. Chestnut Mound.
 Secretary, L. D. J. ENSOR, M.D. Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D. Evensville.
 Secretary, W. B. WILLIAMS, M.D. Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D. Cardiff.
 Secretary, G. C. G. GIVAN, M.D. Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D. Greenbrier.
 Secretary, B. F. FYKE, M.D. Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D. Murfreesboro.
 Secretary, RUFUS FITTS, M.D. Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, Dr. L. S. TILSON.....Erwin.
 Secretary, Dr. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

ANNUAL REPORTS FROM COUNTY SOCIETIES.

To the Secretaries of County Medical Societies:

LET the Secretary of each County Society note the following facts: Our next annual meeting will be held in the city of Memphis, beginning on the second Tuesday of April and lasting three days—the 12th, 13th and 14th. The reports from County Secretaries showing each member, postoffice and other data, with dues for the coming year—\$2 for each member—should be in the hands of the Secretary of the Association at least thirty days prior to the meeting, in order that a general report of the condition of the Association and its affiliating County Societies may be compiled in ample time for the annual meeting. At the proper time, special instructions will be mailed to each County Secretary, with proper blanks for making County reports. Between this and that time, all information concerning members should be properly collected and arranged, so that the blanks can be filled out without trouble and returned promptly to the Secretary. Please

remember that any money for dues of members should be sent to the Treasurer of the Association, who is Dr. W. C. Bilbro, Murfreesboro, Tenn. All information concerning members who have died since the last meeting should be collected, put in proper form, as a report from the local County Society, with whatever resolutions concerning those members which have been adopted by your local County Society. This information should be collected, prepared properly, and sent to the Chairman of the Committee on Memoirs, who is Dr. A. F. Richards, Sparta, Tenn. This information should be in the hands of this Committee before the meeting of the Association; in fact, it should be sent to the Chairman or some member of the Committee thirty days before the annual meeting, so that this Committee can properly compile this report. (See Committee on Memoirs, first page in JOURNAL.) All of these matters are important and should be attended to now, so as to avoid complications at the time of the meeting.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., JANUARY, 1910

No. 9

THE OCULAR COMPLICATIONS OF NEPHRITIS.

HILLIARD WOOD, M. D., NASHVILLE.

THE impairment of vision in renal disease was first noted by Richard Bright in 1827; these changes were studied in the living eye by Heyman in 1856; and in 1859 Leibreich figured the fundus changes met with in renal retinitis. These changes have since been the subject of many interesting papers, among the most able being those by Marcus Gunn, in England, and de Schweinitz, in this country.

The ocular complications of nephritis may be classified as follows:

1. Affections of the eyelids and conjunctivæ, including hemorrhages and edema.

2. Paralyzes of the ocular muscles.

3. Sclerotic changes in the retinal vessels, characterized by reduction in the calibre of the retinal arteries with thickening and hardening of their walls; flattening of the veins where crossed by arteries, with increased tortuosity and ampulliform distention of veins; retinal hemorrhages and edema.

4. Retinitis, neuritis and neuro-retinitis with fatty degeneration of the retinal elements; with or without edema and hemorrhages into the nerve head and retina.

5. Sudden blindness occurring in acute nephritis, or in acute exacerbations of chronic nephritis.

1. Edema of the eyelids was noticed by Bright in 1827, and may occur either before swelling develops in other parts of

the body, or it may be associated with general edema. This swelling most often affects the loose cellular tissue of the eyelids, but may also involve the ocular conjunctiva, producing a non-inflammatory chemosis.

Hemorrhages into the lids and conjunctivæ, frequently taking place at night during sleep, may occur in any stage of chronic nephritis, and are produced by the high blood pressure on the weakened and degenerated vessel-wall. These hemorrhages, especially if recurrent, are of evil prognostic import, as they indicate a general tendency to hemorrhage, which may later develop in the brain and be the immediate cause of either paralysis or death. For this reason it has been suggested that such non-traumatic hemorrhages should excite our suspicion and lead to an examination of the urine for albumin and tube casts.

2. Paralysis of ocular muscles was noted by Finlayson in 1877; and according to Knies is so frequent that any suddenly developing paralysis should lead to an examination of the urine. These paralyzes develop suddenly and frequently subside with, or without treatment, only to recur in the same or in a neighboring muscle. They are due to hemorrhages occurring either in the mental centres, the sub-centres, or along the course of the nerve. They are, therefore, an index to the condition of the

cerebral blood vessels, and are hence of evil prognostic importance, such paralyzes being usually terminal symptoms in nephritis.

3. Occurring in the retinal vessels are alterations which are coincident with the earliest changes in arterio-sclerosis which often precede the appearance of albuminuria, and which may, therefore, be called the prealbuminuric changes in the retina. These alterations consist in a thickening of the arterial wall; a development of light stripes along the arteries, indicative of perivasculitis; and undue tortuosity of the arteries, some of the smaller branches assuming a cork-screw appearance; in alternate contractions and dilatations of the veins, the veins being pressed upon and flattened out where they are crossed by the hardened arteries, presenting at the point of crossing the appearance, so well described by de Schweinitz, of a rubber tube being pressed upon by an iron rod, causing an ampulliform dilatation of the vein at the point distal to the place of pressure. Finally, in the language of de Schweinitz, "there are edema of the retina in the form of gray opacities around the disc, or following the course of the vessels, hemorrhages manifesting themselves as linear, or roundish infiltration, or sometimes assuming a drop like form."

These retinal changes are associated with the earliest manifestations of arterio-sclerosis such as alteration in the character of the pulse; increase of the heart sounds, both at the apex and the base; and the increase of arterial tension as determined by instrumental measurements. They are, hence, of diagnostic importance in the incipient stage of arterio-sclerosis, which may lead to various forms of nephritis, and to serious and fatal hemorrhages into the brain.

4. Retinitis and neuro-retinitis albuminurica are characterized by whitish spots and hemorrhages, which may occur sepa-

ately or be combined. The whitish spots are the more characteristic; they occur especially in two locations—*i. e.*, around the nerve head and the yellow spot, being more frequently seen around the latter. They appear as small, white, sometimes yellow, sometimes glistening points, arranged concentric to the macula. They vary in size and number, being at times very few, at other times so numerous as to cause the star-shaped figure at the fovea centralis; next to the macula they are most often seen to surround the optic disc, and a few may be scattered over the adjacent parts of the retina. These spots are seldom, or never, found toward the periphery of the retina. They are due to fatty degeneration of the inflammatory effusion, of the nervous elements, and of Muller's supporting fibres. A few of them may be absorbed, but new ones appear, and on the whole they tend to increase.

Edema of the retina, especially around the disc and along the course of the vessels is often present. Around the disc this edema may have the appearance of a circular cloud, giving rise to the "snow bank of the retina."

Associated with these spots may be hemorrhages into the different layers, but especially the inner layers, of the retina. Hemorrhages into the inner, or nerve-fibre layer have a linear, or flame shape; deeper hemorrhages may be round or irregular in outline. They, like the white spots are more numerous around the nerve head and macula, but, unlike the white spots, may be found well toward the periphery. The effect of these hemorrhages upon vision naturally depends upon their size and location, a small hemorrhage in the macula region blurring vision more than a larger one toward the periphery. As a rule they are small, but at times are so profuse as to burst through the hyaloid membrane into the vitreous. At other

times they cause detachment of the retina, and hemorrhagic glaucoma may likewise result. These hemorrhages may be absorbed, leaving white spots, which may become fringed with dark pigment. Associated with these changes are the alteration in the retinal vessels above noted.

Neuritis and neuro-retinitis are also met with, the disc becoming swollen, red and blurred in outline. At other times it presents the appearance of "choked disc" as seen in cerebral tumor.

These retinal and nerve lesions may occur in the various forms of chronic nephritis, or in acute nephritis, such as scarlatinal nephritis, or the nephritis of pregnancy. They are, however, more common in the contracted kidney, or interstitial nephritis. The percentage of cases of nephritis in which retinitis occurs is variously estimated by different observers from 7% to 30%, with the probability that 12% would be approximately right. The stage of the nephritis in which the retinitis occurs is of importance from a prognostic point of view. It is one of the late complications of nephritis. Statistics show that about 62% die within one year after the development of the retinitis, and that 85% die within two years. Occasionally a patient will survive the development of retinitis several years, and I have observed one such case. Although occurring late in the nephritis the retinal changes are often the first to be observed, and it is not at all unusual for Bright's disease to be diagnosed by the ophthalmoscope.

The prognosis as regards vision is better than as regards life. Under treatment vision may actually improve, but relapses occur, and should the patient survive a term of years atrophy of the nerve and retina may ensue. Usually, however, death ends the scene before vision is totally lost. The prognosis as regards vision varies,

however, with the cause of the nephritis. In acute nephritis the retinal lesions may disappear; this is especially true of scarlatinal nephritis. In the nephritis of pregnancy retinitis may occur at any stage and the later in utero-gestation the retinitis develops the more favorable the prognosis for vision. To quote from Lucien Howe, "Where vision begins to be impaired only in the last two weeks of pregnancy, recovery follows almost invariably. When retinitis begins in the eighth month or thereabouts, not one-half of the cases recover, and a certain number do not materially improve. Finally, when the retinitis begins earlier, for example, the middle of the seventh month, and when nature does not interfere by bringing on the miscarriage, and when the patient escapes with her life, it is only to remain blind."

5. Sudden blindness may occur in acute nephritis, or in acute exacerbations of chronic nephritis. The blindness is unaccompanied by ophthalmoscopic lesions, unless these previously existed as the result of chronic retinal disease. The blindness is total and persists for a day or so, and then disappears as suddenly as it came. Such blindness is due to acute uremic poisoning, and from the fact that the pupillary reaction is usually preserved, it is believed that the toxemia affects the higher or mental centres of vision.

From the foregoing and imperfect description of the ocular changes in nephritis it will be seen that not only is an ophthalmoscopic examination often times the means of diagnosing Bright's disease, but that it may show those earlier changes in artero-sclerosis which often precede and cause the renal disease. It will also appear that the ophthalmoscope will give us valuable information as to the stage and progress of Bright's disease, and hence

de Schweinitz has wisely suggested that in the treatment of nephritis examinations of the eye ground should be made,

not once, but periodically, just as examinations of the urine, both chemical and microscopic are made.

GENERAL CONSIDERATIONS IN THE SURGERY OF THE MASTOID.*

RICHMOND M'KINNEY, A. M., M. D., MEMPHIS.



HE surgery of the mastoid which I purpose considering is that which comes within the scope of what is called the "simple" mastoid operation but, which is simple only in so far as it is differentiated from the procedure of complete exenteration of the mastoid antrum and middle ear, which is denominated the radical operation, for no mastoid surgery is of such slight import as to deserve to be called "simple." The operator of limited experience, who has perhaps opened two or three or a half a dozen mastoid antra, with eurentement of the surrounding cells, may be satisfied to consider the work simple, but as his experience broadens he will learn, perhaps from trying experience, that he has been laboring under a delusion as to the real character of the work involved.

The majority of the cases of mastoiditis for which we operate present the antrum in the location defined by the classic suprameatal triangle, but an abnormal location of the mastoid antrum is not so uncommon as to be a rarity, and is likely to be encountered by any novice in mastoid surgery. When the antrum is not revealed after the operator has entered the mastoid to a sufficient depth, in his judgment, unless the surgeon be one of extensive experience, he is likely to become pan-

icky over this fact, and may, to use a popular expression, acquire "cold feet." I was indeed surprised myself, on studying the splendid collection of temporal bones owned by Mr. Arthur Cheate, the London otologist, last summer, to find so many instances of abnormal location of the antrum as were shown in these five hundred odd specimens. It was a revelation, and opened up to view the possibilities in temporal bone anatomy. Not only were there exhibited a number of cases of deep and high lying antra, but some were shown in which there was practically no antrum at all.

In two of Mr. Cheate's specimen, Nos. 169 and 403, the outer antral wall measures three-fourth of an inch in thickness, and in the latter of these the antrum is quite small. Again, twenty of his specimens are instances where Macewen's triangle is fallacious, the antrum in these lying wholly above the posterior zygomatic line. A number of others show the middle fossa dipping down, causing part of the triangle to lead to dura mater.

To contend with a possibly abnormally located antrum, we are told to take a bent probe and pass it up through the attic into the antrum, using this as a guide, but if the case presenting is characterized by the abnormality shown in many of these cases, the operator would indeed be at a serious loss as to how to proceed. A deep-lying antrum oftentimes can not

*Read by title before the Tennessee State Medical Association, Nashville, April 13-15, 1909.

be located with the bent probe used as indicated, and the question then occurs to the operator as to whether he should continue down, through the dense and healthy bone, with the hope of entering the antrum, or of removing all necrotic bone that he can find superficially, and trusting to nature to take care of the rest.

In most cases of acute mastoiditis as soon as the cortex is removed pus will be discovered, and it is furthermore an established fact that the lower portion of the mastoid process usually presents the greatest amount of disease, and we have such an able and experienced otologist as Politzer in his classic work advocating the nonentrance of the antrum in most cases of mastoiditis coming to operation. Politzer says that his experience has shown that there is slight if any connection between the antrum and the mastoid cells in these cases, and he claims that most of these cases will recover after removal of the necrotic bone down to the tip, and that it not only is not necessary to enter the antrum, but that recovery will be much quicker than when the antrum is opened. This opens up a question that perhaps will have to be determined by individual experience. Kerner and others of large experience assume an opposite standpoint, and argue for opening the antrum in all these cases. There is no question from my own experience that recovery is sometimes quicker where the antrum is not opened, but it would be only under exceptional circumstances that I would content myself without entering the antrum. I believe that the disease must have originated there, and that the operator can be much surer of recovery if the antrum is entered and curetted. I can not understand how there could be a suppurative mastoiditis from a middle ear inflammation without there be positive connection between the antrum and the mastoid

cells. Yet I have had several cases where I followed Politzer's rule and merely curetted until I reached apparently healthy bone, in which recovery has been uninterrupted and perfectly satisfactory. It is the old practice of establishing drainage for an abscess, as is exemplified, for instance, in an appendiceal abscess, where it may be necessary merely to open down to the abscess and secure proper drainage. Yet with the knowledge that there is a diseased middle ear and antrum back of this trouble, it is a safe rule to follow that the antrum should be entered whenever feasible, for then we are surer of having no necessity for another operation. When the antrum is not revealed after the operator has gone a half to three-fourths of an inch down toward its presumed location, even the cleverest operator has cause to feel concerned, and to pursue his way with halting strokes. Not that there is any great danger even if the dura be exposed, but the chance of there being an anomalous sinus is the "sword of Damocles" hanging over the head.

Mention of the sinus brings up that most dreaded possibility in mastoid surgery, wounding of the lateral sinus. We have two *noli me tangere*s in mastoid surgery—the facial nerve on one side and the lateral sinus on the other, but of the two I had much rather enter the sinus than injure the facial nerve. In doing the simple mastoid operation there is very little danger of injuring the facial nerve unless the posterior wall of the external auditory canal is invaded more than is ordinarily necessary, but the danger of injury to the sinus is an omnipresent reality. Again I would cite Mr. Cheatle's collection of temporal bones in evidence of the frequency of abnormal location of the lateral sinus. It was extraordinary to me to observe so many cases of superficial and forward lying sinus as are

shown in this collection. Far more frequently was abnormality of sinus location noted than was that of the antrum, and certainly there was sufficient evidence in this collection to bear out the statement that the operator can never be sure that he is not going to plunge into this vein. The rule of a narrow and high mastoid evidencing a prominent sinus, and of a flat and broad mastoid showing that the sinus is removed from the field of operation does not hold good altogether in actual study of temporal bones, although it is a fair index as to the location of the sinns.

The accidental wounding of a lateral sinus is a dreaded ordeal for even an experienced operator, and where this occurs early in the course of the operation, it is very dangerous indeed for the patient. What must be the sensation of the novice when following a stroke of the gouge or enrette there comes that gush of black blood before his horrified eyes! Only once have I injured a lateral sinus in an experience of thirteen years of mastoid surgery. In this case, fortunately, I had completed the operation and the diseased sinus wall burst as I was preparing to pack the wound, the sinus being located very far forward. The hemorrhage was readily controlled with tampons of hot iodoform gauze, and the patient made one of the speediest recoveries that I have known in my experience. However, I can not advise sinus invasion as an aid to recovery. If the lateral sinus be entered before the operation is completed the bleeding must be controlled by pressure of pads of gauze, as advised in all standard works on otology, and the operation either there ended, or proceeded with, at the discretion of the operator. If the operation has been completed, and septic material removed from the wound before the sinus is injured, of course, as I have already stated, the chances for the

patient are much more favorable. Some operators seem to regard wounding of the lateral sinus as a slight matter, but I am perfectly contented for them to enjoy the experience, and I will continue to try to avoid sinus injury by hugging the external auditory canal as closely as I can when I operate. This should be the rule in these operations, especially for the operator of limited experience, to stay close to the margin of the external auditory canal, and never permit the invasion of bone backward to go farther than is absolutely required in clearing away the necrosed bone, and in doing this the strokes of the curette should always be upward and inward, never backward.

Exenteration of the mastoid tip is, in my experience, the most important step in the operation. I have never seen a case of acute mastoiditis where the tip was not invaded. The cells in the lower portion of the mastoid tip are much larger than in the upper portion, and this fact, together with the influence of gravity brings about quick involvement and necrosis of these structures. Therefore, to secure complete and quick recovery in cases of mastoiditis there should be thorough exenteration of the mastoid tip and perhaps removal of the mesial plate. In detaching the fibers of the sternocleido-mastoid muscle from the tip considerable care should be exercised to avoid traumatism, and the fibers should not be left in a ragged state, for if care be not exercised in this, a painful cellulitis may result. I recall one case of invasion of the cellular tissues of the neck in a patient of mine, with whom I thought I had exercised due care, where a cellulitis resulted with very high temperature, and for several days the tissues had to be stripped of pns. I have never seen any bad results, such as permanent stiffness or loss of function, resulting from detaching the sternocleidomastoid muscle, and

most assuredly a tip can not be thoroughly removed or even exenterated without this is done.

Whiting, in his admirable book, makes a point of the necessity for removal of the cells at the root of the zygoma, and his ground is well taken, for the cells in this locality are large and quickly become necrotic. A few strokes of the curette will clear these away.

Overhanging edges should never be left in the bone cavity. Of course cases will get well where these are left, but ledges of this kind retain secretions and may retard recovery, and there is no excuse for leaving them, since when the bone has been undermined to such an extent as to leave these edges, there can be no possible danger in removing the overhanging bone sufficiently to at least make the walls of the cavity vertical. The rongeur can best be used to this end. It is remarkable how much more the chisel and gouge are used by European operators, to the almost exclusion of the rongeur, than by American operators. The rongeur is more readily controlled, eats away bone just as rapidly, and appears to me decidedly safer.

The bone cavity in the Schwartze, or simple mastoid operation, should be liberal in size, in order that all diseased cells may be thoroughly removed. It is not always possible to preserve the funnel-shaped opening that is recommended, for frequently the necrosis is so extensive that we may have an oblong cavity as we progress with the removal of the diseased bone, but in all events the cortical entrance of the cavity should be amply large to afford plenty of room for the use of the curette, which after the cortex is passed, is the instrument par excellence for the removal of the diseased cells. The curette applied with a forward and upward stroke, with its back to the posterior wall of the cavity, is by far the safest

and most practical instrument to use in clearing the mastoid process. The most dangerous of all the instruments used are the chisel and the gouge, and most American operators content themselves with the use of these merely to get through the cortex, resorting to the rongeur and curette after the cells are reached. As I have already mentioned, European operators practice quite the reverse, and use the chisel and gouge almost to the exclusion of the rongeur and curette.

What might have been mentioned in the first part of this article is the incision of the soft parts. When I first read Whiting's work on the mastoid operation, I was enthused with the idea of bisecting the posterior incision, the classic incision back of the ear being augmented by one running from the back of the mastoid forward and joining the first incision, the "T" shaped incision thus afforded, by means of triangular flaps, enabling the mastoid process to be thoroughly bared. I have now quit using this incision except in cases of very extensively necrosed mastoid, where it may be necessary to lay bare the sinus, for in the ordinary operation it lends nothing to the facility with which this can be performed, results in more extensive scar, and adds further traumatism to the operation.

It may not come amiss, in concluding these rambling remarks, to venture upon that much discussed question—when to operate in mastoiditis? This is very debatable ground, and doubtless largely must be determined at the discretion of the surgeon, for there can be no absolute rule laid down as to when to intervene surgically in these cases. It is a demonstrable fact that the antrum is involved in practically every case of acute middle ear inflammation, and it also is true that before the beginning of necrosis the tendency to acute mastoiditis is, as with every

other acute suppurative process, to resolve if there is sufficient drainage. Therefore, if the opening in the membrana tympani be sufficiently free, the majority of these cases of acute middle ear inflammation with mastoiditis will resolve of themselves. Yet on the other hand, we have before us the incontrovertible evidence of mastoid necrosis, with suppuration and destruction of the cells, and consequent danger to life, which may transpire within a very short time after the beginning of the process, and which at times may present very slight leading symptoms to indicate the necessity for operation. Cases presenting cardinal symptoms may, with what ordinarily would be regarded as most inadequate treatment, resolve in the course of due time with entire restoration to normal, but the surgeon is as yet insufficiently prescient to define which of these cases are going to take this course. I should not be lead into performing a mastoid operation in the presence of a purulent otitis media with a painful antrum on deep pressure provided there were no other symptoms of necrosis, yet if this same case were to present continued temperature, with shooting pains in the mastoid region and radiating therefrom, I should regard it as a case imperatively demanding operation. Again, if a case were to present where the ear had been discharging for some time, with sudden cessation of this discharge and an upward flight of temperature, I should has-

ten that patient to the operating table. Then another picture of a case for operation is where there has been discharge from the middle ear for two or three weeks, with temperature hanging around 100 degrees Fahrenheit, and with a great deal of subjective mastoid pain, especially at night. When the mastoid is opened in a case of this character, there is going to be found considerable necrosis, with pus in the tip. Even such a case as this may evidence pain on deep pressure only over the mastoid antrum, and the other chief points of pain on pressure, the tip, and site of emergence of the mastoid emissary vein, may not be painful to pressure. It is fairly safe to assume that the mastoid cells are involved if there is pain on pressure over these cardinal points— antrum, tip and mastoid emissary vein— but these are merely corroborative symptoms in the presence of other evidence. There is no rule as to how long to wait before opening the mastoid, for some of the most destructive processes that I have encountered have been of relatively short duration, yet I have never opened a mastoid where there had been a history of middle ear suppuration of less than a week's duration, and I believe that it is always well, in the absence of imperative symptoms which should easily be recognized, to employ conservative measures for eight or ten days before subjecting the patient to a major operation such as this so-called simple mastoid operation really is.

MELANCHOLIA.*

HAZLE PADGETT, M. D., NASHVILLE.



ALL types of melancholia considered, the disease is possibly the most frequent of all forms of insanity, and is that form of mental condition manifested by more or less depression with slowness of intellection, retained consciousness and the development of secondary delusive ideas of a self-accusatory type with now and then a great agitation and a great tendency to suicide and sometimes to homicide. While pure melancholia is an affliction of advanced life, I can not agree with Kraepelin in classing it solely as a senile mental condition. It does occur in youth and early adult life, and these patients recovering, leaves no trace of the disease behind. It is not necessary to have an inherited tendency though an unstable nervous system harrassed by the many ups and downs in this our hurly-burly life we are living, certainly is a predisposing cause. Sudden emotions such as shock, grief, chagrin, long continued depressing conditions, especially in persons of poor nutrition, over-work and under the influence of various toxins are well recognized agents and conditions in its cause. I remember a recent case in a young healthy woman, precipitated by a grippal infection. The changes in the brain co-incident with old age seem especially to favor the development of the disease, and this is one reason why some consider it a degenerative insanity. It is claimed by some that it is more common among women than men but this is not my personal experience, and one would naturally think it more common among civilized and cultivated people and with the increase in responsibilities and anxieties of life. Some consider profound

home-sickness a type of melancholia. It is interesting to note that melancholia is not strictly confined to man but some of the lower animals have been known to have attacks. The disease is interesting in that it has no specially known morbid change, no histologic change that is characteristic, though in senile cases and other cases we do find arteio-schlerosis sometimes. The best explanation we have is that it is a nutritional disturbance of the cerebral cell, the nerve cell being acted upon by the many possible influences as anaemia, congestion and toxins, resulting in abnormal metabolism. The exact mechanism of the possible change is not known but in prolonged cases of chronic melancholia we do meet with changes seen in terminal insanities of other kinds, changes like pial and arachnoid thickenings and opacities, vascular degeneration and brain atrophy. Under ordinary conditions melancholia is of slow onset, but cases have been known to develop suddenly. There is a multiplicity of prodromal symptoms and conditions such as a history of great nervous strain and mental anxiety in responsibilities and failing health, poor appetite and digestion. An almost constant state of insomnia before and after the melancholic condition is established, and insomnia is one of the most distressing states of the disease, and when the patient sleeps 'tis oftentimes not refreshing but short and disturbed. The patient is constantly worried and distressed about his business and home affairs. At this stage there are attacks of intense depression and the patient often realizes the unreasonableness of his fears and worries, but it is impossible for him to get out of the atmosphere of his morbid feelings. A very common manifestation of these spells

*Read by title.

is a feeling of guilt or wrongdoing and this phase later on becomes very prominent and distressing, especially to those who have to listen to the oft-repeated statements of moral guilt, sin and unworthiness. These spells of depression grow closer and closer together and more profound till the disease is thoroughly established. The intellect through much of the prodromal times seems often clear and the person may seek treatment for his condition, and if it is a second attack fully realizes what is coming but cannot prevent it. At this stage physical symptoms and conditions exist. Constipation is a most constant condition and often to a marked degree, and going with this is an almost ever present occipital or suboccipital headache. The appetite fails with or without gastric irritability and the patient will not eat or does so with great reluctance and he has to be made to eat either by insistence or force. Soon he evinces physical weakness and prostration and is easily tired upon the least exertion. Then general symptoms of the prodrome may not be recognized till the patient commits suicide or homicide. The tendency to suicide is an ever present danger and it does not always happen when the patient is at his worst but often when he seems to be improving and not considered dangerous to himself. After the incipient stage of melancholia has passed and the disease has become fixed the symptoms change. The condition now is one of a fixed intense depression with a decided delusive tendency. In this stage of intense fixed depression I have seen patients smile and appreciate the comic and then immediately lapse into that awful darkness again. His judgment now has given way. His whole mind is concentrated on his mental distress. When the patient first began he had that vague feeling of having done something wrong that now blossomed into a firm belief that

haunts him day and night, as some unpardonable sin and unworthiness. Everything is wrong with him. He is being punished for his sins and this punishment will continue eternally. Now is one of the most dangerous times in that he has thoughts of suicide. Often there is a certain amount of motor agitation, the patient walking the floor wringing his hands with the feelings of utmost despair, and just recently one of my patients became so violently agitated that he became dangerous to others and had to be tied for a short time. Hallucinations do, or rather can, occur but not till in the pronounced or advanced stages and are not characteristic of the disease. There is a variety of melancholia in which the patients are so completely overcome by their depression and painful mental condition that they lose all physical activity and expression. This is called melancholia with stupor. There is no special change in the skin, except that it is quite often dry and very muddy or sallow. The circulation is generally poor and the temperature may be sub-normal. I have spoken of the ever-present danger of suicide and this does not always come when the patient is at his worst but often when the patient seems to be better, and this is likely to put the physician off his guard. There is no form of the disease that is free from this danger. I have also spoken of homicide. The course of melancholia is slow and of long duration but we do have cases that are very mild and run a short course. One cannot hope for much in less than three months and then the patient often has oscillations and remissions before convalescence sets in and then the patient improves both mentally and physically just a little at a time in one little thing and another. He begins to show a little more interest in things generally; asks a few more questions, and pays more attention to what is going on around him; sleeps

better, appetite improves, delusions gradually pass away till the individual becomes normal again, but when melancholia does not get well, there are several possible terminations; death may come by suicide. The wear and tear of the system in agitated melancholia may directly overcome the patient's vitality and the general defective nutrition plus probably the action of toxins and the patient may pass into the chronic form of the disease. The family and friends are always anxious about the result. Melancholia is one of the specially curable forms of insanity, and if every form of the disease is considered is the most curable. It is generally estimated of those cases that find the way to the asylums that 50 per cent recover. Kraepelin, as I have stated, who recognizes it only as a degenerative or senile affection, reckons his recoveries at about 32 per cent. The prognosis is better under 50 years of age than over that age. The diagnosis of melancholia usually does not offer much difficulty, but there are several states or conditions that can be confused with it, such as the depressed state of paresis and the depressed period of manic-depressive insanity and senile dementia. Melancholia may last for an indefinite period and then get well rather unexpectedly. The treatment is of vital importance and the earlier it is recognized the better and the treatment varies with the stages, the character of the attack and the patient's financial state. In the mild form the patient often does well with a home treatment, but personally, I always advocate getting these patients away from home, giving

them new things to look at, new things to hear, and away from the wear and tear of hum-drum life—travel, when the patient can afford it physically and financially. I have stated that some cases of melancholia are so mild that they can care for themselves, but when the disease becomes well established outside aid must come. An excellent plan is a stay in a sanitarium, but I never like to send a primary and a supposed curable case to an insane asylum. The important primary things to do are to feed the patient well, overcome constipation and give all the sleep you can. During the day it is always well for a short period anyway for the patient to rest in bed, and if the patient is very weak constant rest in bed is best and is very necessary. If the patient refuses food and you can not make them eat, resort to the tube is necessary and this is a good time to incorporate medicine with the food.

Melancholics bear opium well as a rule, and I never hesitate to give opium as morphine plain or codeine and it is interesting to note that it does not constipate but really, the bowel often becomes more regular under its use. I have personally found hyoscine combined with plain morphia given hypodermically of the greatest service in the insomnia. Sulphonal, trional and veronal often give good results. Whatever drugs are used should be under the direct jurisdiction of the physician. When the patient gets better, bitter tonics of various kinds can be given. Uncured and incurable cases usually mean an institutional life.

THERAPEUTIC SUGGESTION.*

JOHN W. STEPHENS, M. D., NASHVILLE.



SIDE from the surgeon's knife, suggestion is probably the most potent single agent at our command. Though undoubtedly it is consciously or unconsciously used daily by every one of us, the wide range of its applicability, and the fact that every detail of its possibilities have not been discovered by all, makes me believe that a discussion of the subject here will be interesting and instructive. Realizing the wide field embraced, I must at the outset disclaim any hope to do more than but briefly indicate some of the more salient features of the subject.

This matter has by no means received the attention and study at our hands that it should and that its importance would warrant, else there would be in the land less of rampant fakery under the guise of Christian Science and the like. Because of the fact that we have failed to fully acquaint ourselves with, and to make proper use of the potentialities here at our command, have these various "healers," practicing under the guise of religion, found the wide acceptance and credence that they have in the community. Tangled in the web and mesh of their mysticism and superstition is much of truth. The famous phrase, "influence of mind over matter," has, indeed, a meaning true, scientific, and sedate, and translated into terms of reason, contains something more than the emptiness of meaningless words. Mind truly does have a wonderful influence over matter when that matter and mind chance to be combined in the same individual. Mind is a won-

derfully complex physiological function which may, from its dependence upon the physiologic state for its existence, be greatly disordered by disturbances of this physiologic state, or, on the other hand, on account of its supreme position as the highest function of that nervous system which dominates every organ and function of the body, markedly influence the character and quantity of that mysterious something called "nerve force" that governs the functioning of every organ and part of the body. Any doubt of the existence of such an influence must, it seems to me, be dissipated by the familiar and oftentimes demonstrated effect upon the gastric function wrought by emotional disturbances, such as fear, anger, worry, etc. We have all seen, too, the greatly increased flow of urine following fright.

These A. B. C. facts of psychology have been seized upon by the religious cultists, who, without probably understanding the true physiologic or psychologic facts involved, have done that for our neurotic patients by prayer and faith healing that we have failed to do with our drugs. This is unfortunate for more reasons than a selfish one, and it behooves us as the professional guardians of the mental and moral, as well as physical health of the state to carefully study this problem in its every aspect.

The term "therapeutic suggestion" is so clearly indicative of its own meaning that it seems hardly worth while stopping to define it, a not too easy task. Roughly we may define it as the influence wrought upon bodily functions by induced ideas. Who has not seen a thousand examples of this, and who can deny the great influence for ill or good exercised over the condi-

*Read before the Middle Tennessee Medical Association at Springfield, Nov. 18, 1909.

tion of the sick man by circumstance and happening? Who has not seen the depression, the halting of the forward march to convalescence brought about by shock or annoyance of external circumstances? Or again, who has failed to observe the stimulation of flagging energies, the dissipation of gloom, the brightening of the outlook upon life, and the return of hope following a favorable, cheering prognosis given by the trusted physician? These latter mean an improvement of bodily function, too, and while it is in the field of functional disorders (if such there be) that suggestion finds its most frequent use, there is no doubt in my mind but that the course of the most grossly pathologic conditions may frequently be materially influenced by it.

In approaching a study of this subject a fact and a question first confront us, the one being the observation that the course of disease, particularly the functional disorders, is frequently influenced by purely mental impressions, and the other, the desire to know how this is accomplished. The latter is quite an involved problem of psychology, not all of which is probably understood by the most learned. Certain well known primary facts of normal psychology and the psycho-pathology of hysteria will, in a general manner, point the way to us. Mind, considered in its totality, may be divided into the conscious and the sub-conscious. The one comprises those mental processes of which we are conscious at the time of their happening, the other, which constitutes by far the greater part of all these activities, consists of those multitudinous associations and inter-associations of stimuli, analyses and syntheses, that precede and determine the finished product of conscious concept or judgment. This realm of the sub-conscious is most wonderful, and its activities marvellously intricate. Its influence over the entire organism is of paramount

importance. Not only does that part of our intellectual activities of which we are cognizant depend upon it almost entirely for their quality and character, but also, as has been demonstrated by investigations into abnormal psychology, concepts resident therein have a most potent influence upon the bodily state. Thus it has been shown that in hysteria a concept of disease here resident may cause to be simulated in the organism all the symptoms of that disease, these symptoms to be dissipated by replacing this first concept by another more dominating one. Here, then, we have pointed the way for our activities and the mechanism of their effect in the functional disorders. But it is not in such states alone that suggestion finds its useful application, for even in those states to which the term "functional" is in no way applicable, suggestion may exercise a potent influence, here the concept suggesting health or improvement exercising a somewhat similar influence for good as does the disease concept exercise an influence for ill in hysteria.

The methods of applying suggestion are multitudinous, and may be either consciously or unconsciously used. The personality, the bearing, the appearance, the reputation of the physician, etc., are of wonderful influence upon the sick man, a fact so commonly known as to be trite. All of us can recall many patients the course of whose illness has been perceptibly changed for good by the appearance upon the scene of another physician, an influence due wholly to the confidences inspired by, or already imposed in, the other man. His reputation, justified or not, as a practitioner in general or for the successful treatment of the particular malady from which the patient suffers; the confidence which he inspires by the methods and thoroughness of his examination; the conviction which he carries of his knowing what he is about and how to do it,

inspire in the patient a mental attitude of confidence and trust far more potent for good perhaps than all the drugs with which he may dose the victim, be their selection based upon a skill ne'er so great. A lack of this confidence, on the other hand, may be more productive of ill than ignorance and blundering therapeutics. To effect such a state of mind in our patients, then, should be our first endeavor, the closest attention to every detail leading up to which should not be considered as beneath our notice. To accomplish this, however, except in those cases where it lies ready made to our hands, requires an infinitude of tact and knowledge of human nature not easy to be obtained. Many factors enter into the matter, many of which are peculiar and personal to the individual case. The careful, painstaking examination; the dignified self-confidence of the manner; the minute attention to detail; the argumentative marshalling of facts; the bold assertion of self assurance and optimism; and a hundred other means are at your command to be used according to the exigencies of the situation and the personalities of yourself and patient. Not the least of these is the true justification of the confidence sought, a justification born of the fact that you really and truly do know what you are about, in the absence of which justification you have no business to be about at all. Beyond this, our initial introduction to the patient as it were, our endeavors toward the fostering and maintenance of such a mental attitude on his part should extend throughout our treatment of the case. In the management of certain functional conditions, neurasthenia particularly, in which my endeavors in the past have not been wholly without success, that which I look upon as one of my most effective therapeutic aids is the repeated assurances given the patient that he is going to get well, and the establishment in his

mind of the conviction that I know what I am talking about and how this result is to be attained.

While advocating such endeavors as are above indicated, I do not mean that we should fail or refuse to exactly and clearly state to the patient his serious and precarious condition, or the impending end, or the prolonged, tedious, or hopeless invalidism before him, when the exigencies of the situation demand.

After the influence of the manner of the physician, as above described, the agencies and methods of applying suggestion are many, the method to be selected varying with the condition to be treated, the personality of the patient, and the physician. That method, which in the hands of one man will be productive of good results in a particular case, will be without effect, or positively detrimental through destroyed confidence, at the hands of another man or upon another patient. Further, not all the therapeutic agents are catalogued by the materia medicist, nor are the physiological actions which he describes those only which may be attained from his drugs and chemicals. Under proper conditions most unclassical, most unorthodox, results may be accomplished. The particular agent or method chosen must depend upon the mental make-up of the patient to a large extent. That which is necessary is to impress upon him the conviction that his improvement and recovery are to be wrought by the particular agent chosen, be this a drug, electricity, the X-ray, hydrotherapy, or what not.

The neurologist or alienist will tell us that of the methods of effecting suggestion hypnotism stands first in importance and the profoundness of results to be accomplished by its use. Quite true, but for obvious reasons it is not at the command of the average practitioner, nor is it applicable to the majority of patients

otherwise susceptible to suggestion in some form. Hypnotism is a powerful, perhaps the most powerful, agent for good in the hands of the expert in the treatment of hysteria and certain obsessional states. In hysteria, as I have previously stated in this paper, the symptoms of disease presented are due to the residence in the subconscious mind of morbid ideas, concepts, mental pictures, if you please, of the disease state aped. The condition is to be cured by displacing this morbid concept by another of opposite content, a result theoretically, at least, best accomplished by suggestion made while the patient is in the hypnotic state. Under such methods most striking results are frequently attained, as when the hysterical paralytic or the hysterical amblyoptic suddenly arises and walks or has his vision restored at a particular time in response to suggestion given in the hypnotic state to the effect that such would occur at a specified time. These same results, however, may be obtained in other ways as a general thing, without the possible danger of a charge of charlatanry. This is illustrated by the case of a young man suffering from hysterical convulsions of extremely severe type. He was having one or more convulsions daily, in which he lost consciousness, and which lasted from thirty minutes to two hours. This had continued for eighteen days, when, he being of more than the ordinary intelligence and rather under my domination, I told him frankly just what was the matter with him, and explained to him the psychology and mechanism of both the cause and the cure of the condition, with the assurance that he would have but one or two more seizures. He had one on each of the three succeeding days, and then stopped, with no recurrence in the year that has elapsed since then. In this case I had previously administered various remedies, endeavoring in this way to effect the sug-

gestion necessary, but it remained for an appeal to his reason to accomplish the desired result.

Another case simulating myoclonus multiplex, with headache, etc., being seen in consultation was assured in the most positive manner and after an impressive examination, that the remedies which I would suggest would unquestionably relieve her convulsions and pain by a certain hour the next day. A placebo was then given, with the happy result foretold.

A case of complete hysterical paralysis of both upper and lower extremities and the back muscles, producing utter and absolute helplessness, was brought to me some six weeks ago. For months the patient had been able to do no more than move her fingers a little, while the paralysis of the lower extremities was complete. She had been told, and believed, that she had "spinal sclerosis." After examining her carefully and convincing myself of the true nature of her illness, I assured her that the condition was a purely functional one, and that I could cure her. I then told her a lot about the administration of drugs by electricity, explaining that this was accomplished by wetting the positive electrode with a solution of the drug to be used, then placing this electrode over the part to be treated and the negative electrode upon the opposite side of the body, whereupon the drug would flow through the tissues from the positive to the negative electrode. I proposed to cure her by thus treating her spinal cord with a rare drug which it would be necessary to procure from New York. What I really used was a solution of capsicum to produce some burning at the site of application. This was all pure and unadulterated fakery, of course, but under it the woman is steadily progressing toward recovery, has the full use of her extremities so far as range of movement is con-

cerned, though not yet, from weakness, able to walk. She is improving daily, and at the present rate will soon be walking. The object of all treatment being the cure of the disease or the relief of the symptoms, I feel that my methods here have been justified by the results, particularly that several very able men had failed in her case, using the ordinary staid and sedate methods of practice.

These three cases of hysteria are cited out of many as indicating the different methods to be pursued in different cases. In the first, I relied entirely upon an appeal to the man's reason and intelligence; in the second, a prescription given with the positive and reiterated assurance of the effects it would produce accomplished the desired result; while in the third it was necessary to resort to the bizarre and spectacular. Static electricity, magnetism, the X-ray, except in the hands of the dermatologist, the blue light, etc., find their value in large part to meet this last named requirement.

In neurasthenia suggestion may be used to exercise a profound impression, and may well be one of the chief agents relied upon. It is my custom in dealing with these patients to first endeavor in every way to gain their confidence, and then to assure and reassure them at every opportunity that theirs is a recoverable condition, and that they are going to get well. From day to day no opportunity is lost to remark upon the patient's improved appearance and the evidences presented of an advance toward recovery. Under this encouragement and the change from home to the institutional environment and regime, in whose effect suggestion certainly plays a part, improvement is nearly always noted. The effect of suggestion is rather strikingly manifest in the matter of the gastric symptoms. Nearly all these patients come to me complaining of indigestion. It being my desire to feed them

abundantly, I am accustomed to order a dietary far more extensive in quantity and variety than they have as a rule been taking, assuring them that they may eat it without fear of discomfort, for I will, with the medicine given take care of the digestion. Often thereafter, if I have that all-important essential, the patient's confidence, under a simple aperient, or perhaps nothing at all directed toward the gastrointestinal tract per se, there is a prompt amelioration or disappearance of the dyspepsia.

Insomnia, when not due to severe pain, or organic disease, or grave mental disorder, is a symptom perhaps more frequently amenable to suggestion than any other. Times almost out of number have I seen a simple hypodermic of plain water, or a powder or potion of some inert substance, promptly produce quiet, restful sleep, in the absence of the administration of something which the patient believed to be a powerful drug he would toss wide-eyed and staring the whole night through. A druggist recently told me of a gentleman who had for five years or more had regularly filled at intervals a prescription given him for insomnia, without which he was utterly unable to sleep at all, but of which a dose at bedtime always gave him a quiet night's sleep. The prescription was for aqua pura, of which he was directed to take but a single dose of five drops at bedtime. Very recently I had a drug case who, after the withdrawal of the narcotic, suffered severe pains in his limbs and could not sleep or secure comfort without the frequent administration of certain small pink tablets. One of these given every hour or two kept him quite comfortable. Each tablet contained about one grain of milk sugar and nothing more, save a little coloring matter.

I have repeatedly seen pain of severe character in neurotic individuals relieved by a hypodermic of water.

My plea here is for the more general recognition of the wide range of application of this agent, suggestion, and not for any less of honesty of purpose in our endeavors, but for the intelligent recognition and intensive application of an agent capable of so much good and so little harm. The object of treatment is always the alleviation or cure of disease, which in a large percentage of every man's cases resolves itself into the matter of the relief of symptoms. Our methods of endeavor looking toward this end should be such as will accomplish this with a minimum of harm to the patient. If pain, insomnia, gastric disorders in neurotics, etc., can be relieved sometimes by a simple and harmless placebo properly administered, it is infinitely better for the patient that it be so done than by the administration of some narcotic or other drug with a possible baneful after-effect. If, further, the desired action of our drugs of true potency can be enhanced and encouraged by the judicious use of a word here and there, then it is highly desirable from every

point of view that this should be done, and it may reasonably be said to be our duty so to do. If by our manner, methods, or in any other way, it be possible to influence our patients for good through a mental attitude thereby induced, then I maintain that, far from being beneath our dignity or notice, these are matters of the utmost importance, and worthy of the closest study and attention of even the most eminent of our profession. I believe this subject offers a wide field for investigation, and that its possibilities of intelligent application are hardly yet suspected. Bodily states and functions certainly are susceptible to psychic influence, more especially so in the functional neuroses, but not here only. Little systematic study of the subject has yet been made, and my object in presenting the matter before you, of the poor, imperfect manner of doing, of which no one can be more fully conscious than I, is to suggest the matter to your attention for possible further thought, and to elicit a discussion that ought to be beneficial to all.

THE BACTERIOLOGY OF TYPHOID FEVER.

WM. LITTERER, A. M., M. D., NASHVILLE.

THE *Bacillus Typhosus* was first observed by Eberth and independently by Koch, in 1880, in the spleen, and diseased areas of the intestine of typhoid cadavers. It was not until 1884 that Gaffky succeeding in isolating in pure culture and described the principal biological characteristics of this micro-organism. Since that time evidence has slowly accumulated that this organism is the cause of typhoid fever. At first difficulties stood in the way of the general acceptance of such a view, owing to the fact that in its behavior the organism did not conform in one important respect to Koch's law, *viz.*: that

it was not possible to produce typhoid fever in animals by feeding them with the bacilli—the natural mode of infection in man, nor was it possible by any mode of infection to reproduce the gross lesions of human typhoid. It is true that typhoid bacilli when inoculated subcutaneously or intraperitoneally will be pathogenic for many animals such animals dying from septicemia.

Later it has been shown that animals under certain conditions, when their power of resistance has been reduced, may be rendered susceptible to infection, with the production of more or less characteristic lesions. Other bacteria, however,

sometimes produce like lesions. Additional evidence of the casual relationship of the germ to the disease was made manifest by the discovery of "Pfeiffer's Phenomenon" and by the Gruber-Widal test or agglutination reaction. Recently the long sought for third requirement of Koch's postulate has been successfully met by Grunbaum of Leeds who succeeded in producing thoroughly characteristic typhoidal lesions in the chimpanzee by feeding with typhoid bacilli. Four were infected, two died with the disease, while the others were killed on the twelfth and thirteenth days. All showed typical typhoidal lesions. Further crucial evidence of its specificity is shown by the report of a number of cases in which pure cultures of the Eberth bacilli swallowed with suicidal intent have given rise to typhoid fever in men (Duflooy and Voisin).

Characteristics of the Typhoid bacillus. The micro-organism is usually about three times as long as broad, being about one-third as long as the diameter of a red blood cell. It is very actively motile, Gram negative, non spore bearing and grows either in the presence or absence of oxygen. The cultivation of the bacillus is quite easy. It grows readily upon all the laboratory media both at room-temperature and at the temperature of the body. For further description of this micro-organism, see any reliable work on bacteriology.

Distribution in Nature. The bacillus typhosus is by preference a parasite. Outside the human body it is found with great difficulty, particularly in water supplies. Only a few well-authenticated instances have been recorded in which this germ has been found in water, soil, etc. The organisms are very resistant to cold and can live for several months in ice though the majority are destroyed in a few weeks. The duration of life in water is important, but it is not easy to say in any given water-supply how long the bacilli may

live. This apparently varies with the amount of movement, sunlight and chemical composition of the water as well as the number of saprophytic bacteria present. Laboratory experiments have shown that they can survive in sterile water for more than three months, and for possibly two or three weeks in unsterilized ground or surface water. In carbonated waters they can exist for about four of five weeks. Jordan, Russell and Zeit are of the opinion that the life of the specific germ in the water of flowing streams is of comparatively short duration. No multiplication of the typhoid bacillus under ordinary conditions takes place in water, even when a considerable amount of organic matter is present, but, on the contrary, there is a steady decline in the number of organisms as the time goes on. Even the evidence of any genuine multiplication in the soil is not convincing.

The history of typhoid epidemics indicates that air borne infection is quite rare since the bacilli soon die if dessicated, but if the interval be short they may be sufficiently virulent to be infective. The old view that typhoid fever is contracted by the breathing of noxious gases—sewer air, etc. is erroneous. So far as known the specific germ is never conveyed in this way. Volumes have been written concerning the role that milk, flies, oysters, uncooked vegetables, etc., play in the conveyance of this disease. Likewise, the chronic bacilli carriers have been the subject of much discussion in which the evidence seems to point to the fact that they are, next to water, the most potent factors in disseminating typhoid fever. It is not within the province of this article to discuss the above important points.

Typhoid fever a bacillemia. Bacteriology, has in the last few years, greatly increased our knowledge of the occurrence of the B. Typhosus in the body. Certain of the abdominal viscera were regarded as the usual site of the bacilli. In 1885

Frankel & Simmonds isolated the bacillus from the blood, but such a procedure was regarded as an unusual occurrence. The increased number of observations which showed the bacilli in various parts of the body suggested that they must occur frequently in circulating blood. Since the use of the ox-bile as recommended by Conradi as a culture medium for the identification of the typhoid bacilli in the blood, extraordinary success has resulted. It is claimed by a number of authorities that the specific bacillus could be recovered in every case of typhoid fever, especially is this true if blood is withdrawn within the first few days of the disease. I can heartily concur in the above statement so far as my experience with nine cases goes. In every one of these the *B. Typhosus* was isolated from the blood on the first trial. In two cases, on the first day in which the patient took to bed, two on the second, three on the third, one on the fourth and one on the sixth. I intend to collect many more cases so that I may arrive at absolutely definite conclusions. I am strongly of the opinion, however, that the ox-bile-blood culture method is a most valuable contribution to the early diagnosis of such a protean disease. Coleman and Buxton, who have had ripe experience in studying the bacillemia in cases of typhoid, state that the bacilli in the blood diminish in number as the disease progresses and finally disappear from it at or about the time the temperature falls to normal. In their first paper they expressed the opinion that in typhoid fever the earliest and principal seat of infection is in the blood and that the disease should be regarded as a bacillemia. They have slightly changed their views as a result of work done on the absorption of the typhoid bacillus from the peritoneum, and from the fact that in typhoid fever the lymph nodes and spleen contain such enormous numbers of bacilli. From this they conclude that in typhoid fever the

bacillus first finds its way from the alimentary tract to the lymphopoietic system, including the spleen, where it develops chiefly and from whence it invades the blood stream. Many observers think it doubtful that the bacillus multiplies in the blood but rather that its presence there represents simply an overflow from the lymph organs. By this interpretation the existence of the bacillus in the blood does not constitute a true septicemia. Buxton calls attention to the relation of the bacillemia to the course and type of the disease. He is quoted as follows: "That in the earlier stages the bacillus invades the blood in greatest numbers. Later, as the disease is approaching a favorable termination, the diminution in the number of bacilli in the blood is simply an index of less active development in the lymphatics and spleen." There appears then to be a definite relation in the evolution of typhoid fever between the symptoms and the bacillemia. The increasing intensity of the symptoms in the earlier period of the disease corresponds to the active growth of the bacilli. They invade the blood stream in increasing numbers and are there destroyed. Then comes the stationary period, when the ratios of growth and destruction appear uniform. The steep-curve period corresponds to a diminishing bacillemia and defervescence to the complete disappearance of bacilli from the blood.

Types of Typhoid. The bacillemia apparently bears no relation to the type or severity of the disease except in so far as regards the number of bacilli. The bacillus is found in the blood equally, but not with the same persistence, in the mild as in the severe cases, and in cases of short as well as of long duration. The bacilli are found in the blood of cases lasting only ten days. The importance of the definite establishment of the nature of these short-duration cases can scarcely be overestimated from the epidemiological stand-

point. The Widal reaction has done much to clear up their diagnosis, but the final proof has remained for the bacteriological examination of the blood.

Relapse. According to Coleman, Buxton and others a relapse means reinvasion of the blood with destruction of the bacilli which probably cause the symptoms of a relapse, but the underlying conditions which inaugurate active development of the bacilli after their growth has once been brought under control, are unknown.

Blood Cultures compared with the Widal reaction. The consensus of opinion is that the typhoid bacillus is always present in the blood before the Widal reaction develops, for the reason that endotoxins must be liberated before the agglutinins could be formed. Proof of this is shown by the researches of Hirsh, Jochmann, Buxton, Coleman and many others. Two hundred and twenty-three cases of typhoid fever were examined by Hirsh, Buxton and Coleman; fifty five out of this number in which the typhoid bacilli were found in the blood, showed a negative Widal. Twenty-three were in the first week, twenty-six in the second week, and six in the third. It sometimes happens that a negative Widal is recorded in the third or fourth week. Again the reaction appears on certain days and then disappears entirely. In such cases blood cultures could very easily settle the question as to diagnosis. In eight of my nine cases the specific bacillus was isolated before the Widal reaction manifested itself. All finally showed the Widal reaction, varying from two to seven days, after finding the bacilli in the blood.

The Widal reaction often spoken of as the Gruber-Widal reaction is without doubt of inestimable value in clearing up many obscure typhoidal like symptoms. Though not considered absolutely diagnostic when the reaction is present, still it is regarded as the most trustworthy test aside from blood cultures that we have

at our command. Cabot's collection of 5,978 cases gives a positive reaction in 97.2 per cent. A positive reaction was obtained before the 8th day in 93 per cent of 849 cases of typhoid fever. The more one studies the Widal reaction the more thoroughly convinced is he of its great value and its specificity. Several years ago many writers observed that in jaundice the Widal reaction would in many cases be positive. Quite a number thought that possibly this would vitiate the diagnostic trustworthiness of the serum reaction. However, since we have come to recognize the importance and the frequency of typhoid infection of the biliary tract, and since we have learned of the occurrence of a primary typhoid cholecystitis and cholangitis, we have come also to think that these cases of jaundice are examples of typhoid infection, and that the Gruber-Widal reaction is of much importance in determining the nature of the icterus. In a number of cases of jaundice that have yielded a positive Widal reaction the typhoid bacillus has been isolated from the biliary tract at operation or after death; and since it has been determined experimentally that the bile as such has little if any tendency to cause agglutination of the typhoid bacillus, it is only reasonable to look upon a positive serum reaction in cases of jaundice as evidence of typhoid infection of the biliary tract.

Conclusions: (1) In every case of typhoid, there is a bacillemia from the beginning of the fever to its defervescence.

(2) The blood culture method is the most valuable contribution to our knowledge concerning the early diagnosis of such a protean disease.

(3) The bacillus typhosus infects the lympho-poietic organs in which they develop to enormous numbers. Invasion of the blood stream takes place when they are destroyed, liberating entotoxins.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.

B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.

GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Elghth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Elghth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

NEXT ANNUAL MEETING.

OUR next annual meeting will be held in the city of Memphis, April 12th, 13th, 14th.

The Committee of Arrangements, composed of physicians from the county of Shelby, and city of Memphis, will have in charge all arrangements for this meeting, and it goes without saying that all necessary will be done to properly care for the Association at that time. They will secure a suitable hall, in which the general sessions will be held and one for the House of Delegates in the same building and in close proximity, so as to expedite the business of the Association. The meeting in Memphis will be especially advantageous to the members from the western part of the State, yet this should be no bar to members from the middle and eastern sections, from which we should have large and representative delegations.

The programme, of course, is always the essential feature of every meeting, and it should be full and comprehensive. This feature is so important that the Secretary desires herewith to bring this matter to the immediate attention of every member, and request those who desire to present papers at this meeting to notify him of

their intention at the earliest possible day.

The programme will be printed in the order in which papers are received, hence the first to come will be the first listed, unless there be good reasons for grouping certain papers bearing on the same general lines.

It is very desirable to have each paper discussed by some one especially interested in the subject presented, hence let each one who presents a paper also name the one whom he desires to open the discussion on his paper. This is at once a compliment to the one selected and at the same time insures a special interest in the subject under consideration. In order to further develop the subject, each one presenting a paper is expected to furnish to the Secretary an abstract of his paper, giving the salient points, so as to place the one who is selected to open the discussion in touch with the peculiar features to be developed by the author. This abstract should be type written, in good form, and should not exceed 150 to 200 words.

Remember that all papers presented or

listed on the programme become the property of the Association, for use in *THE JOURNAL*.

The Secretary is ready to begin the compiling of the programme *now*, so send title of paper, and at the proper time the abstract and name of party who is selected to open the discussion.

—

We are glad to report that our President, Dr. J. L. Crook, who was present at the Southern Health Conference, Atlanta, January 18th and 19th, has arranged for a special night session to discuss the hookworm disease. This symposium will be opened by Dr. C. W. Stiles, of U. S. Marine Hospital Service, and participated in by Dr. H. T. Harris, Secretary Georgia State Board of Health, and by Dr. George Dock, Professor Practice Medicine, Tulane University, of New Orleans.

NEXT PHARMACOPEIAL CONVENTION.

THE following abstract of an editorial from the *Journal of the A. M. A.*, December 4, 1909, should be read with greatest interest by the profession just at this time, and it is hoped that the suggestions therein will meet with the hearty approval of the County Societies:

"THE PHARMACOPEIA. ITS HISTORY AND ITS IMPORTANCE TO THE MEDICAL PROFESSION.

"The importance of the next Pharmacopeial Convention should be thoroughly understood by all medical societies and physicians. These conventions, as well as the national Pharmacopeia, originated in a proposition submitted to the Medical Society of the County of New York by Dr. Lyman Spalding in 1817. Dr. Spalding proposed that the United States be divided into four districts—northern, middle, southern, and western—and that each district should hold a convention of delegates from the medical societies and schools situated within it, to formulate a pharmacopeia. The four district pharmacopeias were to be taken to a general convention

to be held at Washington, composed of delegates from the four districts. From the district pharmacopeias the delegates were to compile a national pharmacopeia. This plan was adopted, the district convention for New England being held in Boston and the convention for the Middle States in Philadelphia, June 1, 1819. No conventions were held in the southern and western districts, but delegates to the national convention were appointed. The first general convention for the formulation of a national pharmacopeia met at Washington, January 1, 1820. The two pharmacopeias prepared in the northern and middle districts were consolidated into one work, which was published in Boston, December, 1820, in both Latin and English. A second edition appeared in 1828.

"The convention of 1820 provided for its own perpetuation and for future revisions, by instructing its president to issue notices in 1828 to all incorporated state medical societies and incorporated medical colleges and schools, asking each to vote for three delegates to represent the district at the general convention to be held at Washington in January, 1830, the convention to consist of twelve delegates. The second convention was held at Washington on January 4, 1830, thirteen delegates being present. The third convention was held in 1840; fourth, 1850; fifth, 1860; sixth, 1870; seventh, 1880; eighth, 1890; ninth, 1900. The tenth will be held this year, 1910. From its foundation up to 1850 it was an organization of physicians; in 1850, pharmaceutical colleges were given representation, and in 1890, pharmaceutical societies were admitted.

"In spite of the fact that this book originated with the medical profession and was compiled and published primarily for its use, it has come to be regarded too much by physicians as a book which is of interest and value mainly, if not solely, to the pharmacist and in which the physician is not especially concerned. It is now time that specific and lasting reforms were effected. Two definite steps should be taken before the meeting of the next convention in Washington: (1) All incorporated state medical associations and medical colleges entitled to representation should select the three best representatives possible and should see to it that they attend and take part. (2) Each county society should devote at least one meeting during the winter to a discussion of the present Pharmacopeia and the formulation of suggestions as to its improvement.

"There is, indeed, grave danger lest this work, which was primarily a reflection of the needs of the medical practitioner, should become a purely pharmaceutical rather than a medical compilation. There is also danger of its being controlled by commercial interests. Such a result will be due solely to lack of interest and activity on the part of the medical profession. Active interest in this matter should be aroused and medical societies should see to it that they are properly

and effectively represented in the coming convention, and that their delegates are instructed regarding the desires and opinions of those they represent. If every county society will devote one evening to the discussion of this question and will send its recommendations to Dr. Reid Hunt, chairman of the Committee of the American Medical Association, their recommendations will be transmitted to the convention and will receive consideration."

BOOK REVIEWS.

INTERNATIONAL CLINICS, Vol. II, Nineteenth Series, 1909. Published by J. B. Lippincott Company, Philadelphia and London.

This is a very valuable and instructive volume, including twenty important and interesting articles covering the general field, as follows:

Upon Treatment, four; Medicine, four; Surgery, four; Gynaecology and Obstetrics, two; Ophthalmology, one; Otology, one; Proctology, one; Psychiatry, one; Pathology, one. These papers are handsomely illustrated by four colored plates, sixteen plates and eleven figures and drawings. These add very much to the interest and clearness of the volume.

It would be impossible to review in detail the papers presented, but the simple mention of the names of the contributors will be sufficient guarantee of their high character. This will show very clearly that it is a volume that will be of great aid to the physician.

Under the head of Treatment we find Harlan Shoemaker, M.D., Philadelphia; Caron de La Carriere, M.D., Paris, France; Louis Fischer, M.D., New York, and Bradford C. Loveland, M.D., Syracuse, N. Y.

Medicine.—Under this head we find Herman B. Allyn, M.D., Philadelphia; George M. Niles, M.D., Atlanta, Ga.; F. Parkes Weber, M.D., F.R.C.P., Hampstead, England, and Edward F. Wells, M.D., Chicago.

Surgery.—Here we find Peter Daniel, F.R.C.S., London; F. Dumarest, M.D., Paris, France; Edward H. Goodman, M.D., Philadelphia, Pa., and H. Schwatt, M.D., New York.

Gynaecology and Obstetrics.—Richard F. Woods, M.D., Philadelphia, Pa., and Charles W. Hibbitt, M.D., Louisville, Ky.

Ophthalmology.—Here we find an interesting article by Leslie Buchanan, M.D., Glasgow, England.

Otology.—H. O. Reik, M.D., Baltimore, Md.

Proctology.—Bernard Asman, M.D., Louisville, Ky.

Psychiatry.—Tom A. Williams, M.B., C.M., Washington, D. C.

Pathology.—F. G. Bushnell, M.D., London; H. N. Fletcher, M.B., F.R.C.S.E., Brighton, England, and A. G. Ellis, M.D., Philadelphia, Pa.

THE PHYSICIAN'S POCKET ACCOUNT BOOK. By J. J. Taylor, M.D. Bound in full leather, 24 pages of practical instruction for physicians, 216 pages of accounts. Price, \$1 per copy; published by the Medical Council, 4105 Walnut Street, Philadelphia, Pa.

This book is without a doubt the most complete and at the same time simple and thoroughly efficient account book that has ever been devised. Furthermore, it is absolutely legal and can be presented in any court of justice. It does not make use of any hieroglyphics, but everything is entered in plain language, and any judge can understand it.

The book contains 24 pages of business instructions for physicians, which have been found very useful and correct in a long and varied practice, under the headings of "Importance of a Due Bill," "Fees," "Billing and Collecting," "Cautions," "Statute of Limitations," "Form for Wills," "Dying Declarations," "Saying and Investing," "Instant Treatment of Poisoning," etc. It also contains an average fee bill, which has been found to work out correctly in practice.

The book contains 216 pages for accounts, of which eight pages are devoted to alphabetical index, 146 pages are devoted to regular accounts, 32 pages to short accounts, 24 pages to cash accounts, and 8 pages to birth, death, and vaccination records.

This book has the advantage that entries can be made in a fraction of a minute, right upon the spot, thus insuring that none will be omitted on account of procrastination. The book being

always in the physician's pocket, it is always up to date, never requiring any posting, and when he meets a debtor on the road who inquires about his account, he can inform him at a moment's notice and thus collect what the debtor has to pay at that time, instead of putting off an answer until some convenient season and thus missing that payment.

This book is so convenient, useful, and legal that an eminent Philadelphia judge, who has tried hundreds of cases in which physicians' accounts were involved, has stated that, "In the light of my recent examination of the law, I can say that the form of book which you have gotten together is as convenient and accurate as could well be devised."

The price of this book is only \$1, and physicians will find its purchase the greatest investment they ever made. Sample pages will be sent free upon request.

SYSTEMIC (INCLUDING SPECIAL) PATHOLOGY. By J. George Adami, M.D., and Albert G. Nicholls, M.A., M.D., F.R.S., Assistant Professor of Pathology in McGill University. In one octavo volume of 1082 pages, with 310 engravings and 15 colored plates. Cloth, \$6, net. Lea & Febiger, Philadelphia and New York, 1909.

It afforded us very great pleasure, and at the same time profit, to have the opportunity of reviewing the first volume of *Principles of Pathology*, in which General Pathology was so ably presented. Now that the second volume of this epoch-making work has come to us, we feel especially interested in calling attention to some of its peculiar features.

Systemic Pathology is systematically presented, beginning with a study of the cardiovascular system. Beginning with the blood—the great medium of exchange—it is discussed quantitatively and qualitatively, and along with these important features is included the latest information concerning the lymphatic system, which bears such an intimate relation to the vascular system.

Cardiac function and its disturbances are given a complete review and amplification, based upon the most recent and reliable sources of physiological investigation.

The pathological and histological anatomy of the heart are given a thorough discussion.

Vascular function and its disturbances, as well as the pathological and histological anatomy of the arteries, veins, and lymphatics, are con-

sidered at length and most instructively, and in conclusion a complete resumé is given of the latest knowledge of the blood-forming organs.

The circulation of the blood, being interested in combustion, both delivering to the tissues, the necessary material for, and taking from them, the products of, it must be continuously supplied with the necessary oxygen for, and also deliver up the final product of this process, namely, carbon dioxide; hence it leans upon the respiratory system, the special function of which is to supply oxygen and dispose of carbon dioxide.

The respiratory system is considered as to function and disturbances, special attention being given to the parts of the mechanism, and pathological conditions met with in each, which affect the general economy.

Again, as the material for nutrition of tissues is supplied through the blood, it must in turn receive its supply from some source, properly prepared, for delivery to the various tissues to be supplied; hence the next system of peculiar interest is the alimentary system, by which this important process is accomplished.

Under this section, the digestive functions and their disturbances are dealt with, as to development, mechanism, secretion, absorption, and assimilation, and their relation to disorders of the general system.

In addition to this there are special chapters upon the mouth, œsophagus, stomach, intestines, liver, biliary passages, pancreas, and peritoneum, with special reference to pathological states of peculiar interest.

As these systems must act under the direction and control of a purposeful system, which demands of each its peculiar function, over them is placed the masterful nervous system, which calls each in turn, or simultaneously, to perform its part in this complex organism, of which it is an integral factor.

So the nervous system is next studied along the lines of structure, and its bearing upon disease, special consideration being given to brain, cord, peripheral nerves, the eye and ear.

Finally, separate chapters are devoted to the ductless glands, the urinary system, the reproductive system, the tegumentary system, the muscular and osseous systems—all of which are most interesting and highly instructive. This volume is a monument to the authors, Dr. J. George Adami and Dr. Albert G. Nicholls, both of McGill University.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II. NASHVILLE, TENN., FEBRUARY, 1910 No. 10
SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee Shelbyville.

C. H. DAVIS, M.D., East Tennessee Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D. Chairman, *Ex-Officio* Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan
GEO. H. PRICE, M.D. Editor, *Ex-Officio* Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D. Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D. Covington.

Alternate, J. D. BREWER, M.D. Newbern

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL:

A. B. COOKE, M.D., Nashville.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman* Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EYE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

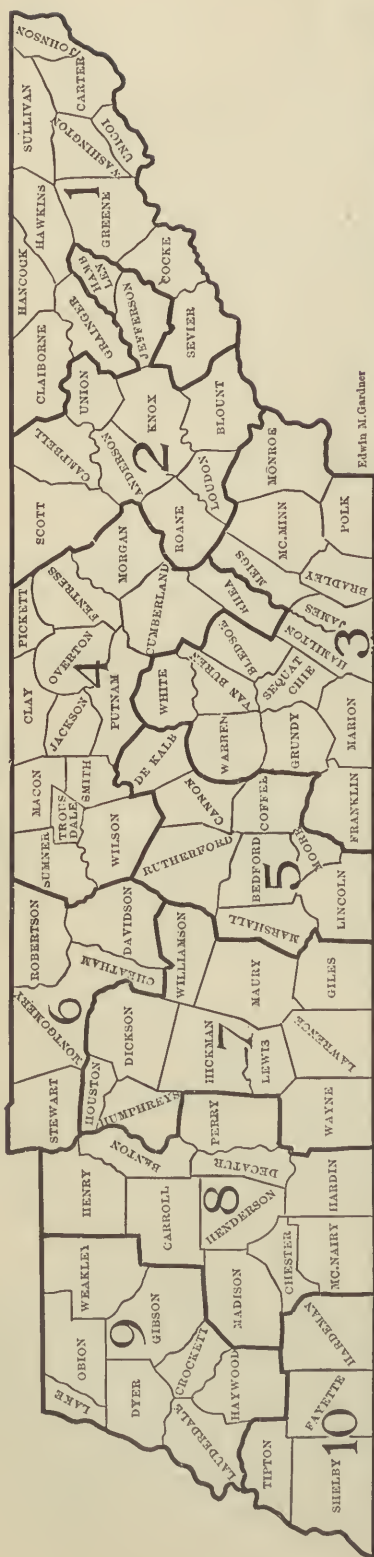
H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 year Franklin.

Eighth District.

E. K. McNEIL, M.D., 2 years. Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLED SOE COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CLAIBORNE COUNTY.

President, M. B. CARR, M.D.....Tazewell.
Secretary, B. M. DAVIS, M.D.....New Tazewell.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. MCREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Moshelm.
Secretary, S. W. WOODYARD, M.D.....Greeneville.

HAMBLEN COUNTY.

President, W. E. HOWELL, M.D.....Merristown.
Secretary, T. L. SMITH, M.D.....Merristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bollivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Parls.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D.....Whitleyville.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. MCNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewlsburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

MORGAN COUNTY.

President, A. S. WILTSIE, M.D.....Lancing.
Secretary, G. R. TODD, M.D.....Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.....Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, K. E. ROGERS, M.D.....Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. G. GIVAN, M.D.....Harlman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, DR. L. S. TILSON.....Erwin.
 Secretary, DR. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

ANNUAL REPORTS FROM COUNTY SOCIETIES.

To the Secretaries of County Medical Societies:

LET the Secretary of each County Society note the following facts: Our next annual meeting will be held in the city of Memphis, beginning on the second Tuesday of April and lasting three days—the 12th, 13th and 14th. The reports from County Secretaries showing each member, postoffice and other data, with dues for the coming year—\$2 for each member—should be in the hands of the Secretary of the Association at least thirty days prior to the meeting, in order that a general report of the condition of the Association and its affiliating County Societies may be compiled in ample time for the annual meeting. At the proper time, special instructions will be mailed to each County Secretary, with proper blanks for making County reports. Between this and that time, all information concerning members should be properly collected and arranged, so that the blanks can be filled out without trouble and returned promptly to the Secretary. Please

remember that any money for dues of members should be sent to the Treasurer of the Association, who is Dr. W. C. Bilbro, Murfreesboro, Tenn. All information concerning members who have died since the last meeting should be collected, put in proper form, as a report from the local County Society, with whatever resolutions concerning those members which have been adopted by your local County Society. This information should be collected, prepared properly, and sent to the Chairman of the Committee on Memoirs, who is Dr. A. F. Richards, Sparta, Tenn. This information should be in the hands of this Committee before the meeting of the Association; in fact, it should be sent to the Chairman or some member of the Committee thirty days before the annual meeting, so that this Committee can properly compile this report. (See Committee on Memoirs, first page in JOURNAL.) All of these matters are important and should be attended to now, so as to avoid complications at the time of the meeting.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., FEBRUARY, 1910

No. 10

THE DISSEMINATION OF TYPHOID.*

R. L. JONES, M.D., NASHVILLE.

FOR the purposes of this paper it will be assumed that the etiological factors of typhoid fever are well established, these factors being the bacillus typhosus and the susceptibility of the patient. There remains to consider, then, the mode of conveyance of the living bacillus into the body of the patient and the life history of the bacillus outside of the human body. The bacillus typhosus is parasitic by preference, growing best in the lymphoid structure of the bowel and in the intestinal contents. It has been found outside of the human body only in situations where the contamination can be traced to the discharges of typhoid patients or convalescents. Lumsden, of the U. S. Marine Hospital Service, says: "All known facts support the view that man is the permanent host . . . and that if their multiplication in and their dissemination by the human host could be prevented, these organisms would soon perish from the earth." Therefore, each case comes from some previous case.

According to some observers, however, as McFarland, the organism is saprophytic as well as parasitic, and finds abundant opportunity in nature for growth and development. But the general teaching is that in surroundings with a small amount

of nutritive material it cannot cope with the more vigorous saprophytes.

It does not infest the bodies of domestic or other animals naturally, and experimental infection of animals is accomplished with great difficulty, and only after the resistance has been lowered by starving. Injection into the peritoneum is followed by slight growth. The living organisms fed to animals cannot be recovered from the feces, showing that they do not thrive in the intestinal canal of animals. Therefore, the disease cannot be disseminated by cattle drinking polluted water, as was once feared. In milk, however, where an abundance of nutrition exists, it can grow vigorously.

Ordinarily no multiplication takes place in water, even in the presence of a considerable amount of organic matter, but a steady decline in numbers takes place. It has been shown by laboratory experiment that they can live in sterile distilled water for three months, and they will probably retain their vitality in unsterilized ground water for two weeks.

Gartner claims that the bacillus may travel in streams for a distance of about seventy-five miles, and that they can retain their vitality in still water for four or five days. Sanitary engineers are agreed that it is the time consumed and not dilution or rapidity or turbulence of a river that purifies streams. If the bacilli travel in a

*Read before the Middle Tennessee Medical Association at Springfield, November, 19, 20, 1909.

stream at the rate of five miles per hour, then, accepting the results of Russell that they die in five days, they will be carried a distance of six hundred miles.

They are very resistant to cold, having survived freezing for a period of seven weeks, growing vigorously when again brought into a favorable environment. While the identification of the bacillus in water is difficult and the results doubtful, there have been epidemics in which the infection was undoubtedly water borne, as in the notable epidemics at Plymouth and Media, Pa.

Therefore, all discharges from a typhoid patient should be destroyed or sterilized before they are allowed to flow into the stream, as a stream that does not furnish a domestic water supply is a rarity. As the bacillus may live in the soil for weeks and in privy vaults for a much longer time, in locating privy vaults it should be remembered that it is possible for the direction of the flow of ground water to be in the opposite direction to that of surface water. Ground water tends to flow towards the larger streams without being necessarily influenced by intervening hills, therefore, in locating vaults the location of near-by streams should be considered.

As milk is an excellent culture medium, we would naturally suppose that it is a potent factor in the dissemination of typhoid. Several outbreaks have been traced to an infected milk supply, one of the most striking and best worked-out examples being the one reported by Lumsden and Howard.

In the city of Georgetown, a suburb of Washington, with a population of about twenty thousand, there occurred an outbreak of typhoid fever, which was traced to the milk supply, and ultimately to a bacillus carrier. Fifty-four cases developed. Thirty of these had milk from dairyman A, eighteen from dairyman B, and three from the dairy farm of Mrs. S.,

leaving only three cases unaccounted for. A and B both bought their milk from Mrs. S. No typhoid was found at A, B, or S, but by repeated fecal examinations Mrs. S. was shown to be a bacillus carrier, though eighteen years had elapsed since she had had typhoid fever.

The sale of milk from Mrs. S.'s farm was stopped, and in eight days the last case developed, the epidemic thus abruptly ceasing.

Flies as carriers of disease have engaged the attention of sanitarians for about fifteen years. Among the first to suggest that the infection of typhoid fever was conveyed by house-flies was Dr. George M. Kober, of Washington, D. C., who states in his report, as Health Officer of the District of Columbia, that flies may carry to our food supply infectious matter from privies and other exposed fecal matter. Some years previous to this Celli showed that typhoid bacillus fed to flies passed through the intestinal canal in a virulent condition. In 1897 Dr. Wallace Clark, Health Officer of Utica, N. Y., noticed that sixty per cent of the contagious diseases of the city occurred in the eighth ward, a locality not over-crowded and under the same sanitary regulations as the rest of the city. He found that the garbage dump in this ward was also used as a dump for human excrement, and that during August, the time of the epidemic of intestinal diseases, this dump was swarming with flies. This source of infection was removed, and proper disposal of garbage and sewage was adopted and the death rate of the eighth ward fell to the normal for the city. At the beginning of the Spanish-American war, Dr. George M. Sternberg, Surgeon-General, U. S. A., issued a circular to the medical officers of the army, calling their attention to flies as conveyers of typhoid. Dutton, during the course of the war, observed that typhoid in camps spreads in the direction of the prevailing winds, and

that flies also travel with the wind. He showed that flies carry living typhoid germs over two weeks, and that their excrement contains living typhoid bacillus. He also called attention to the small pumace fly as a carrier of typhoid. These flies are especially dangerous, because they not only feed on food products that are eaten uncooked, such as fruits, but that they deposit their eggs therein.

In the "Report on the Origin and Spread of Typhoid Fever in the United States Military Camp during the Spanish-American War of 1898," Drs. Reed, Vaughn, and Shakespeare show that 96 per cent of the Volunteer Regiments developed the disease within eight weeks after going into camp, and that flies, and not infected water, were the important factor in the spread of the disease.

In 1897 a committee was appointed by the Merchants' Association of New York to investigate the pollution of waters surrounding the city in its relation to the prevalence to typhoid fever and intestinal diseases of children. The report of this committee showed that the water front of Greater New York was in a filthy condition, due to the presence of exposed fecal matter, and that during the hot weeks in summer these deposits were swarming with flies. These flies were shown by means of staining methods to be traveling back and forth from near-by restaurants, markets, and homes. It was demonstrated by bacterial methods that these flies were the carriers of myriads of fecal bacteria being deposited upon the food. A careful study of the seasonal prevalence of flies by means of daily counts of the number caught in cages showed that they were active in large numbers only during the few hot weeks of summer, while the health statistics showed that these were the weeks when an abnormal number of cases of ty-

phoid fever and diarrhoea were contracted. The number of cases rose with the rise in prevalence of flies and fell with the decrease in the number of flies trapped. Maps were made showing by black dots the location of the fatal cases of typhoid and intestinal diseases, and a veritable black belt was found to run along the water front. Most of the deaths were within three blocks of the water front.

Experiments were made by the Agricultural Experiment Station at Stars, Conn., showing the number of bacteria that a single fly may carry. These showed that the number may range all the way from 550 to 6,600,000. Counts of the bacteria on the bodies of flies caught during the past summer in the Nashville market house ran from 100,000 to 1,000,000.

During the Spanish-American War, officers and men drank the same water, yet typhoid was comparatively much less prevalent among the former, because their food was much better protected.

Summary.

1. Typhoid bacillus may reach the intestinal canal of man by means of polluted water or milk or by means of food infected through the agency of flies.

2. Cities, counties, and States should use their utmost authority to prevent the pollution of streams, and cities should by constant vigilance insure for her citizens a pure milk supply.

3. Means should be adopted to prevent the breeding of flies by destroying filth and screening manure piles.

4. Privies should be so constructed that flies cannot gain access to the vaults.

5. Food stuff exposed for sale should be screened from flies.

6. The place to kill the typhoid bacillus is in the bed pan.

TYPHOID FEVER—PROGNOSIS AND TREATMENT.*

T. E. ABERNATHY, M.D., CHATTANOOGA.



IN making a prognosis in typhoid fever, many points must be carefully considered. All the favorable and unfavorable must be duly weighed before we can make a reasonable and probable prediction of the termination of a given case. The *age* of the patient is the most important of any *one* point. Speaking in a general way, the young stand typhoid *well*, the old *badly*. Obesity, especially in the older patients, is an unfavorable condition. The fat are more likely to have hemorrhages, pneumonia, and heart weakness than thin subjects. Temperature, as a rule, is higher and more persistent in these patients. The pulse is of great prognostic value. *Scarcely anything* is more reassuring than a regular pulse of good quality and a relatively low rate. On the other hand, a rapid pulse, irregular and of unequal volume, is an exceedingly bad omen. The chances of recovery in patients having serious constitutional diseases is much lessened, especially organic heart disease, pulmonary tuberculosis, Bright's disease, and syphilis. The stage of the disease at which the patient comes under treatment is of much importance. Some patients are practically doomed by over-eating and undue exertion before a physician is called. These are the co-called "walking cases," and are usually bad subjects. As a rule, by the time a diagnosis is made, the type of the attack is well marked. The higher and more persistent the fever, the worse the outlook. *Very high temperature* in the evenings, with a marked morning remission, denotes a shorter attack

than a lower grade of temperature with scarcely any remission. The dullness and stupidity of a patient, unless *very* pronounced, is of little prognostic importance. The surroundings of the patient, the nursing and care he will receive during the attack and convalescence, must also be considered. The disease seems to be more fatal in some families than in others. This, however, may be due to a lack of hardihood more than to any peculiar susceptibility to the ravages of typhoid. A second attack is usually milder than the first. By weighing all these points, and taking into consideration the general condition and appearance of the patient, *I do not believe* there is *any other* acute infectious disease of *like gravity* that a prognosis can be made *with as much certainty*.

GENERAL MANAGEMENT.—As soon as the patient is known to have typhoid fever, if not already in bed, he should be put there, and not allowed to sit up until the disease has run its course. The bed pan should be used from the beginning, and nourishment taken without the patient sitting up. The room should be light, well ventilated, and in a quiet location. There should be no unnecessary furniture or hangings. The doors and windows should be *well screened* in the summer time, or other means used to keep the room free of flies. The bed should be so placed that the patient can get plenty of fresh air, without being exposed to drafts, and should be prepared with due regard for the comfort and cleanliness of the patient, and accessible from all sides. He should have at least one good cleansing bath a day and a fresh gown. The bed linen should be changed once a day, and oftener, if necessary. The mouth should be carefully

*Read before the Chattanooga and Hamilton County Medical Society, October 1, 1909.

looked after, and washed several times a day, and no sordes allowed to collect. Parts most exposed to pressure, especially about the back and hips, should be frequently rubbed with alcohol, to guard against bed sores. Patients in hotels, boarding houses, and in homes, where circumstances are such that they cannot be well taken care of, had best be removed to a hospital, if one is convenient. But a patient should *never be moved after the first week* except for urgent reasons. He should be cut off as much as possible, under the circumstances, from the outside world; no letters, newspapers, books or company allowed, except in mild cases. It is best to have a good, well-trained nurse in charge, but if this cannot be, a member of the family should have the care of the patient and carry out the instructions of the physician in a systematic way. The pulse and temperature should, as a rule, be taken every four hours, and carefully charted. The movements of the bowels examined for blood, mucus, and undigested food. The action, whether large or small, color, and whether solid, semi-solid, or liquid, and the time of the movement. The urine also should be noted as to time when passed, quantity, and color, and, when indicated, a chemical analysis made. The nourishment, and the amount taken at each time, should also be charted. If a patient is delirious, he should never be left alone. I have on several occasions known patients to leave their beds under such conditions. If the proper diet is given, there will be no diarrhœa to contend with. If the bowels fail to act as often as once every two days, a terpineum enema should be given. Every other day is often enough for the bowels to move in the majority of cases. Cathartics should not be given after the first week.

DIET.—With few exceptions, we are all agreed that the diet in typhoid fever should be *strictly liquid*. Not many pa-

tients can go through a spell of fever without changing the diet, from time to time. The taste of the patient should be considered as much as possible. With milk, buttermilk, broths, made of chicken, mutton, beef, and vegetable *soups*, quite a varied diet can be given. The broths and soups should, of course, be strained. *I prefer buttermilk* to any other one article of diet. It is nourishing, easily digested, and, when liked, can be taken longer, possibly, than any thing else, without disturbing the digestive organs. Sweet milk, while liked by many, is too apt to curdle and act as an irritant to the gastro-intestinal tract, distending the bowels with gases, raising the temperature, and adding to the discomfort of the patient. The broths and soups are relished by many, who cannot take milk of either kind. If proper attention is paid to the diet, there will be very little tympanitis and diarrhœa in the vast majority of cases. Water should be given plentifully, and not wait for the patient to ask for it. Coffee, tea, lemonade, and cocoa can also be allowed, provided there is no individual contraindications. The nourishment should be given at regular intervals, usually from three to four hours is often enough. Care should be taken that the patient is not overfed. Where patients take plentifully of nourishment during the day, they should not be awakened at night except for other reasons.

REDUCTION OF TEMPERATURE.—Almost every known antipyretic drug has been used to reduce temperature in typhoid fever. The most common are quinine, antipyrin, phenacetine, aspirin, acetanilid, and aconite. Any one of these drugs, if given for any length of time, is productive of more or less harm by their depressing effect upon the heart, and nervous system, or by disturbing the stomach. Quinine probably depresses the heart less than the others, and is also the least antipyretic.

but, if continued longer than the first few days of the disease, will upset the stomach and depress the nervous system. All the others act directly as heart depressants, and, if used at all, should be used with great caution.

BATHS.—No doubt water is the safest agent we have for the reduction of temperature. The manner in which it is used should be the one best suited to the individual. In the majority of cases, I prefer sponging the patient with tepid water and gradually cooling it, if necessary, by adding colder water. This method is rarely objected to by the patient, and the temperature is usually reduced by ten or twenty minutes' sponging. This can be repeated every four hours, and oftener, if thought best, if the temperature is above 102 2-5. In persistent high temperature, a good method is to wrap the patient in a sheet and sprinkle him with water from head to feet. This can be kept up for a long time, if necessary, and should he become chilly and nervous, a dry cover may be thrown over him for a short time, which soon quiets his nervousness, and the bath resumed, if thought best. Putting the patient in a tub of ice-cold water, according to Brand, no doubt lowers the temperature, but, in my opinion, the shock to the nervous system is so great to many patients that it is positively harmful, and the amount of good done, not to compare with the other methods mentioned, and should not be used only in well selected cases. No matter what manner of bath is used, an ice cap should be kept on the head during the process of bathing. After coming out of the bath, the patient should be rubbed with a dry towel and made as comfortable as possible.

In excessive high temperature, that cannot be reduced by the usual methods, irrigating the bowels with ice water generally lowers the temperature in a short time and can be frequently repeated. In

the case of high temperature, where pneumonia is a complication, I have seen great improvement follow the application of a few drops of guaiacol. This drug should never be applied except under the direct supervision of the physician, for I have seen dangerous collapse follow its use in more than one instance.

SPECIAL SYMPTOMS — TYMPANITIS.—Tympaanitis rarely occurs if the patient is on suitable diet, but when the condition exists the diet should be changed, and, occasionally it is best to allow no food whatever for twenty-four hours. Turpentine stoops may be applied to the abdomen and enemas of turpentine or asafœtida given. Care should be taken that too much water is not used, when the distention is great. A pint is usually sufficient. This may be repeated later if the first is ineffectual. I knew one patient to perforate, collapse, and die in a few hours after a large enema had been administered. The colon tube may be used with benefit in some cases.

NERVOUS SYMPTOMS.—For the headache, in the early days of the fever, aspirin, phenacitine, acetanilid compound, or quinine may be tried, but I have rarely seen anything but opium in some form give relief if the pain is severe. Delirium of the mild form, when the temperature is not high, requires no special treatment; but if loud and boisterous, should be controlled by the ice cap and baths, if possible. If these fail, the bromides may be tried or morphine given hypodermically. In low, muttering delirium, *sub sultus tendinum*, and other symptoms denoting great depression of the nervous system, alcohol in some form is indicated.

PULSE.—The pulse should be carefully watched, and, at the first signs of heart weakness, strychnine should be commenced. One-thirtieth of a grain by the mouth every four hours is usually sufficient, but can be given oftener and hypodermically later on if necessary. Alcohol

should be reserved for symptoms of collapse. Digitalis is a useful drug in heart weakness, and may be continued for some time if the pulse rate is rapid.

HEMORRHAGES.—For hemorrhages, morphine hypodermically should be given, ice bag applied to abdomen, all food and water should be stopped at once. Calcium chloride in doses of five to ten grains may be given every three hours. I have seen good results from the administration of this drug in several instances. If the hemorrhage is large, normal salt solution should be given by infusion. Adrenalin solution has never seemed to me to be of benefit in these cases. No food should be given for at least forty-eight hours after the hemorrhage has ceased. Water may be given in small quantities much earlier. If the heart's action becomes much weakened, stimulants should be given until heart failure is averted. Irrigating the bowels with ice water is highly recommended by some, and seems a rational treatment, but I have never tried it. The bath should be stopped also until danger of hemorrhage has passed, except sponging with warm water. After a hemorrhage, nothing should be done to move the bowels for at least two or three days, unless the distention, which usually follows, is great. Then an enema of four ounces of normal salt solution with a few drops of turpentine may be given every four hours until the bowels move.

PERFORATION.—According to statistics gathered from several authors, perforation of the intestines is shown to occur in about three per cent of all cases of typhoid fever. Some place it as low as one per cent, others as high as six and one-half per cent. At any rate, it is not a very rare occurrence. The treatment may be classed under two heads—laparotomy or opium. No doubt the former offers almost the only hope, and of late years the mortality reported from these opera-

tions has steadily decreased. While the reports of the cases treated by opium has, to say the least, shown no improvement. Therefore, when perforation has taken place, we should secure the services of a competent surgeon, and without delay have the operation performed, unless he is already in a moribund condition, the objections of the family cannot be overcome, or the surroundings are such that we feel the operation would be useless. If operation is abandoned, then morphine should be given hypodermically in sufficient doses to relieve the pain and keep the patient in a stupor until improvement takes place. I saw a patient at Erlanger Hospital about two years ago recover under this treatment, a patient of Dr. Rathmell's. Dr. Gibbs has also reported the recovery of a case under this treatment several years ago.

DRUG TREATMENT.—As to the drug treatment of typhoid fever, outside of free purgation with calomel in the beginning, the majority of cases will get through better without medicine than with it. I have seen many patients go through the disease without a dose of medicine except as I have mentioned, and without complications. So far as the so-called antiseptic treatment is concerned, I do not believe the disease is shortened or in any way benefited by their administration. I have used the sulpho-carbolates, salicylates, and many others without any seeming benefit, unless it be salol. This drug may be of some benefit and disturbs the stomach, probably less than any of the others mentioned. I have used the Woodbridge tablets sufficiently to convince me that any drug that continuously stimulates intestinal peristalsis is liable to cause hemorrhage, and for this reason I discarded the Woodbridge tablets years ago. So far as Acetozone is concerned, I consider it to be perfectly harmless, but I have never seen a case treated with it that I do not

think would have gotten along just as well on water. Emulsions of turpentine, iodine and other nauseating mixtures that were formerly so much in use, have, in my opinion, done more harm than all the other medicines combined. As long as the patient has a good stomach, there is hope for him, but let him have his stomach torn up by the daily administration of these nauseous mixtures, and his chances of recovery are slim indeed.

CONVALESCENCE.—The general rule in convalescence is to treat all patients alike in regard to diet and sitting up, no matter whether he has had a short, mild attack, with scarcely any bowel symptoms and no high fever, or whether he has had a severe attack, with high temperature, tympanitis, hemorrhages, etc. In these mild cases I see no reason why they should not be allowed milk toast, rice well cooked, minute-boiled eggs, and a diet of similar nature, after the temperature has been normal for

three or four days. The patient may also begin to sit up with the back-rest about the same time and at about the end of the week be out on the floor in the chair. Of course, if the temperature rises he must again be put on liquid diet and be kept in bed. After a severe attack, however, the patient should be kept on liquid food until the temperature has been normal for at least ten days or two weeks. And the return to solid food must be more gradual. Some patients, though, in the fifth or sixth week, or longer, have become so emaciated that a semi-solid diet is indicated, notwithstanding the fever still persists. These patients should be fed scraped raw beef, soft eggs, and the cereals well cooked. The change of diet from liquid to solid must always be carefully watched.

The serum treatment of typhoid fever is yet in its infancy, but will probably be the treatment of the future. I have never tried it or seen it used.

TREATMENT OF PELVIC INFLAMMATIONS.*

E. M. SANDERS, M.D., NASHVILLE.

THE almost universal prevalence of this disorder among women who have borne children, miscarried or aborted, is sufficient reason, it seems to me, for bringing what appears to be a very commonplace subject before this body; and while the general treatment of pelvic inflammation has long since become one of the beaten paths of our professional lives, still I believe, in the light of our present-day knowledge, the subject will bear discussion.

Regardless of where we practice, what class of patients we handle, or what kind of work we do, we see some form of pelvic

inflammation almost daily. On account of the bountiful nerve and blood supply of the pelvis and the peculiar physiological function of the pelvic organs, inflammation in this region should receive special attention. Infections in this region frequently resist our best efforts to bring about desired results as there is such a plentiful distribution of cellular tissue around the pelvic organs and lining the pelvic cavity.

About 1840 a number of French investigators instituted a systematic study of pelvic inflammations, and from that time to the present day much has been written on this subject and great labor expended to unravel the causes and outline a rational treatment for the inflammations

*Read before the Middle Tennessee Medical Society, Springfield, November 19, 20, 1909.

and the accompanying complications of the contents of the female pelvis. This work is still going on in the hands of our foremost men, as evidenced by the quantity and quality of literature on this subject at the present time.

In the beginning, we should understand that it is not possible to treat all similar cases of pelvic inflammations alike when they are found in different social strata. The rich woman, for example, can be treated indefinitely along palliative lines for chronic pelvic inflammation, while her servant girl must receive radical treatment for her trouble, that she may earn her livelihood. Excluding tubercular and pelvic inflammations caused by special accidents, such as infected ovarian cysts and other neoplasms found in the pelvis, I have found the following classification to be very useful in outlining the treatment for these cases as we find them.

First.—The mild, acute cases. These are usually gonorrheal in origin, but not always. Bidel has reported fifty-six cases of acute salpingitis in girls under ten years of age, operated upon for appendicitis. He states positively that the infection reached the tubes by way of the vagina and uterine, and that gonorrhea was excluded in every case. I have had two cases, although one of these cases may be doubtful, as we did not have microscopical proof. The diagnosis of the non-gonorrheal cases is usually difficult, but when diagnosed the treatment is palliative, unless no benefit is received. Then the infected tube should be removed, and the case treated according to the findings. The gonorrheal cases, of course, should receive, first of all, the well understood treatment for acute gonorrhea in the female, and I will not take up the details of this treatment at this time. But in addition to this, they should have careful attention of the pelvic inflammation, regardless of just what the pathology is; and it

may be quite varied. These cases should be put to bed, if possible, and kept very quiet for at least a week after the inflammation has apparently subsided. The diet should be semi-solid, limited and selected, withholding stimulants and highly nitrogenous foods. However, the patient should not be starved. Large quantities of water and sweet milk should be given, and a proper amount of sleep should be secured. Induced, if necessary, with some harmless means or drug. External applications of heat or cold are of little benefit in these cases. The bowels should be regulated to about two actions daily. Hot douches, twenty minutes long, given every four hours, as hot as the patient can bear, in the dorsal or knee chest position. Many of these cases when so managed will promptly respond, but as a rule such cases do not come for treatment at all, and therefore become chronic before they are seen.

Second.—The Mild Chronic Cases. These may be gonorrheal, streptococcal or mixed. As a rule they are gonorrheal. In Roberts, General Gynecological Pathology, we find a long chapter on the relationship of gonorrhea to pelvic inflammations. The conclusion of which is, that a man, when once infected, is never cured, and that if married he is almost certain to infect his wife. Gonorrhea can, of course, be cured, completely and permanently in either sex, by timely and appropriate treatment, but the eradication of the infection from the glands of the cervix is well-nigh impossible. Nearly all of the acute cases of yesterday become these chronic cases of today, as only a small percentage of the mild acute ones recover and do not recur. These cases should be given the most careful and skilled attention. When they present themselves for treatment a most painstaking history obtainable should be secured, not only for the purpose of making correct diagnosis at the time, but for

future reference in case of surgical treatment must be resorted to—and this is almost sure to follow. Microscopical examinations of the secretions should be made, but even these findings are sometimes misleading as the exciting agent may have ceased to appear at the time of the examination. When a diagnosis as to the cause has been made, vigorous treatment should be instituted, and every effort made to save these unfortunates from what follows this condition in a large majority of cases. The patient should be instructed to rest, in bed if possible, during the menstrual period, and to refrain at all times from strenuous exercise, such as fatiguing work, long walks, the use of the sewing machine, etc. She should be given a diet list that includes only easily assimilated and highly nutritious foods, and instructed to the most minute detail as to her rest, exercise, work, baths, food, and drink, both as to quantity and quality, and not be given a few general instructions and carelessly sent on her way with an ichthyol tampon, which, in my opinion, is practically useless. After the urethra and vagina have had proper attention in the office, curetment should be thoroughly done as an effort to arrest the infection in the endometrium from where it is constantly sending more trouble into the deeper tissues. Such local and general medication as the individual physician is best acquainted with should be used. There are many useful remedies in our hands today for the treatment of such cases, which should be used according to the indications, and one's thorough acquaintance with the remedy. The bowels should be regulated, preferably with some form of cascara. Electricity, massage, and many other luxurious procedures have been used on this class of cases. Some of them may give some benefit to some cases, but it is my opinion that the proper rest for the conservation of the patient's en-

ergy, the proper nutrition to raise her vitality, along with the office attention, and the twenty-minute hot vaginal douche properly given, includes the most beneficial treatment at our command. The hot douche should not be used unless it is used properly, as I believe when it is used in a half-hearted way it is not only without benefit, but actually harmful. It is quite difficult to get these patients to take twenty-minute douches in the dorsal or knee-chest position, using the water as hot as it should be. And I believe a physician should satisfy himself as to the thoroughness of this treatment, or stop it. If the case shows improvement, the treatment should be kept up until a complete cure has been effected. This, however, is rare. The question as to whether or not the incurable chronic inflammations are to be submitted to operation must be decided with the individual case. A radical operation should never be undertaken, however, until a diagnosis as to the exciting cause of the trouble has been arrived at. This we will discuss under the last class of cases mentioned in this paper.

If the case is believed to be gonorrheal in origin, at least three months should elapse from the onset of the infection before the case is submitted to operation, as it is dangerous to operate in the presence of a virulent gonorrhea. Hunter and Harris have collected eighteen cases supported by bacteriological proof, and seven of these cases died. Peritonitis is not the only danger of operating in an active gonorrheal field. Price reported a case in which such an operation caused general dissemination of the bacteria with involvement of the joints, and endocardium, and finally death on the fifteenth day. There was no evidence of peritonitis in this case. If the case is believed to be of streptococcic origin it should be allowed to go to a definite termination, either to resolution, or fall into a severe chronic case, the

treatment of which will be taken up later. If it is decided that the gonococcus is the exciting cause, and the case is submitted to operation, the infected tubes, and one or one and a part of the other ovary should be removed, the adhesions broken up, the uterus put into position and curetted, but hysterectomy is seldom indicated.

Third.—The Severe Acute Cases. These patients are seen with severe inflammation. This may follow infection from labor or abortion, or may come in the wake of an attack of gonorrhea. The exciting cause is usually not a true gonorrhea, but is a mixed infection, which finds easy sailing in its wake, or coincident with the attack, or it is of streptococcic origin. The pulse is rapid, the temperature is moderately high, and sometimes very high. There is usually a good deal of pain with more or less distension and rigidity of the lower abdomen, signifying a real pelvic peritonitis. We usually find them constipated, since defecation is painful. Sometimes they have nausea and vomiting. They have distressed expressions, and are frequently so nervous and sensitive that satisfactory examination is impossible. I believe this class of patients is more mismanaged than any other. I have seen them given one large dose of salts after another daily, which theoretically sounds good, but practically must add to the pain and aggravate the spreading peritonitis by exciting an unusual peristalsis of the bowels. We never know how far such a peritonitis will travel, or to what severe degree it will assert itself. Therefore, these acute cases should be watched closely. No hard-and-fast rules can be set down for the management of these cases, but a few general principles may be followed. If constipated when they are seen, the bowels should be thoroughly evacuated with salts or oil and immediately quieted by the administration of opium. The diet should be liquid, easily

assimilated and very nutritious, so as to leave practically no residue for the lower bowel. When the pain is severe, the opium should be continued, keeping the intestinal tract at rest, and with a daily enema, a very satisfactory condition of the intestinal tract can be maintained. Hot or cold applications should be applied to the abdomen, hot ones usually proving more satisfactory, especially in the beginning. A large percentage of these cases will promptly improve, and I do not think we should advise them to undergo an operation unless a distinct and troublesome mass is left in the pelvis, or the attacks are prone to recur. If properly instructed and dealt with patiently, a great many of these cases will get entirely well and never have a recurrence. If one is so unfortunate as to be unable to control the infection and it goes on to localization and the formation of an abscess, this should be opened and drained as soon as feasible. If it is in the *cul-de-sac* of Douglas, as it usually is, this can easily be done by making a stab in the posterior vaginal fornix with a long-handled, sharp-pointed, curved on the flat, scissors, and when the pus has been reached, open the blades and withdraw. This should never be done without a reasonable degree of certainty that the abscess wall is adherent to the vaginal plate. This operation is best done by touch, but if the operator is in doubt as to whether the mass is adherent or not, it should be done by sight; and if it is found that the mass is not adherent to the vaginal wall a strip of iodoform gauze should be passed through the incision to the wall of the abscess, and allowed to remain long enough to be walled off, when it can be removed and the cavity opened. When these abscesses are opened for the immediate relief of severe symptoms, which, fortunately, is seldom necessary, it is a dangerous procedure, and should be done with the greatest rapidity and skill.

When the pus has been evacuated and the cavity carefully irrigated, copious drainage should be instituted by a T rubber tube, surrounded with gauze, and the patient should be stimulated and nourished to the limit. The chronic abscess should be treated accordingly, and is a very satisfactory operation, as they all get relief and deaths are rare in this class of cases. These masses should never be opened and drained across the peritoneal cavity, though such cases sometimes recover. After the operation they should be kept up in Fowler's position, and the Murphy drip enema continued until the severe symptoms subside, after which, when the patient has regained her strength, she can be gotten out of bed, and allowed to take moderate exercise even before the drainage tube is removed. It is very essential to continue the drainage for a sufficient length of time, and then the patient should be kept under observation, as a large number of these cases subsequently have to undergo an abdominal operation for the complete removal of the pathology remaining in the pelvis. In many of these cases it is not only necessary to remove the tubes, and as much of the two ovaries as is advisable, but it is frequently best to do a hysterectomy, especially when the uterus is found large and boggy. If one is working after a severe infection, and is in doubt as to the exciting cause, I believe the patient should be given the benefit of the doubt and a hysterectomy done, as this may prevent further trouble. The after-treatment of such cases is important, and should be given the same careful attention as the previous treatment and operation.

Fourth.—The next and last class of cases are the Severe Chronic Ones. They come out of the classifications above, being the unfortunates who, on account of their low vitality or the high virulency of the infection, have gone on to some localization of pus, inflammatory mass or adhe-

sions, which must receive surgical intervention. They may have pus tubes, ovarian abscesses, abscesses in the broad ligament around the uterus, or, in fact, anywhere in the cellular tissue of the pelvis, or dense adhesions and inflammatory masses, frequently holding in their grasp one or more loops of the intestines. These patients are usually at a low ebb mentally and physically. Aged beyond their years, nervous and irritable, suffering a great deal, and frequently addicted to some harmful drug habit. When they walk they show the shambling gait; when they work it is with great effort; they are just alive and get little pleasure out of their existence. Bi-manual examination usually reveals the telltale tender pelvic mass, but the history is frequently obscure and misleading. The hot vaginal douches, rest in bed, applications to the abdomen, and medicines, are useless to these patients. They are first, surgical cases, and later, medical, and it frequently requires all the skill of both to bring them back to anything like a normal condition. The two principal agents of infection causing chronic pelvic inflammatory masses, are the gonococcus and streptococcus. Crossen says that in this class of cases, where chronic suppuration in pelvis is present, the pus is sterile in fifty-five per cent. It contains gonococci in twenty-two per cent, streptococci and staphylococci in twelve per cent, and other bacteria, such as the colon bacillus and pneumococcus, are occasionally found. These statistics exclude the tubercular cases. These cases must be operated upon, but before the operation is undertaken, a diagnosis as to the exciting cause should be made. If possible, first by securing an accurate history, and second by the location of the lesion. As a rule, these distinguishing points can be settled by a close study of the history and a careful bimanual examination. Uncertain cases should

be classified one way or the other. In the gonococcic cases the inflammation is preceded by a history and evidences of gonorrhea, or comes on without apparent cause and the lesion is located in the tubes, which usually involve the ovaries and adjacent peritoneal surface in time, but does not involve the connective tissue to any decided extent. The diagnosis is greatly assisted if it is possible to learn the behavior of the pulse, temperature, and other symptoms during the onset of the trouble. If the mass is due to streptococcic infection, the onset can usually be traced to sepsis following labor, abortion, or miscarriage. Sometimes to instrumentation. The location of the lesion is in the connective tissue area, usually in the broad ligament. It is distinguished by its low situation in relation to the uterus. Its intimate relationship with the uterine wall, as though it were a part of the same, or with the pelvic wall. It may be so large as to simulate a fibroid tumor, and is always hard. A tubo-ovarian mass, on the other hand, is distinguished by its being situated high in the tubo-ovarian region, or prolapsed into the *cul-de-sac*, and a distinct groove can usually be felt between it and the uterus and the pelvic wall, and sometimes a rounded outline of the tube or ovary can be felt; unlike the streptococcic mass, it is soft. When the two points do not agree, the principal weight should be given to the location of the lesion. A good rule to follow is, when in doubt, give the patient the benefit and call the infection streptococcic. The virulency of this infection persists indefinitely. Miller re-

ports a case in which the bacteria existed for six years, and another for twelve. Automatic sterilization of a streptococcic abscess is possible but rare. When the surgeon is in doubt as to the time when to operate on these cases, he should wait a little longer unless he feels that delay is dangerous. Masses caused by the gonococcus can be safely removed after four months, but those caused by the streptococcus are always dangerous, and every effort should be made to open and drain them by some extra peritoneal route. If they cannot be approached through the vagina, an attempt should be made to reach them by going over poupart's ligament, and although we see a number of such cases recover which have been opened and drained across the peritoneal cavity, still we must always remember that this is a hazardous procedure, and must be done with caution, followed by strenuous treatment and free drainage. It is fortunate that the two infections present different clinical characteristics. No one should open the abdomen of one of these cases without being fully prepared to do anything from the simple breaking up of adhesions to the re-section of an intestine, or a hysterectomy, both of which we frequently find necessary. Both the ovaries should never be removed. The better one always being saved, unless too much diseased, when it should be re-sected. Drainage should always be used when in doubt, the vaginal route being preferable. A large percentage of these cases recover and never relapse.

✓

TRACHOMA.*

C. B. WYLIE, M.D., CHATTANOOGA.

IN taking up the subject of trachoma, I am not unmindful of the fact that a limit could scarcely be placed upon what *might* be written about this disease, for I realize that a good-sized book *might* be, and still not all be told.

There is no ocular disease so far-reaching in its disastrous effects upon the human eye, or that produces more misery and distress and eventually blindness, as trachoma, with but one exception—that of ophthalmia neonatorum.

TRACHOMA.—This is an infectious, inflammatory disease of the conjunctiva, characterized by a purulent discharge, an increased thickening and vascularity, and a formation of granular elevations of lymphoid infiltrations, which ulcerate, and are followed, subsequently, by cicatrization, producing deformities and distortions of the lids, of variable degree, depending on extent and severity of tissue involved; and sequellæ, most common of which is pannus.

CAUSES.—It is generally believed that trachoma is due to some form of micro-organism residing in the secretions of the affected membrane, but as yet has probably never been isolated. Contact is almost invariably the means of acquiring this disease, but occasionally you find cases arising apparently spontaneously. Debilitated conditions seem to increase susceptibility toward contracting this affection. Until the last few years it seemed to be most frequently found in barracks, asylums, and places where large numbers of people were collected together, without

due regard for sanitary regulations, and while, undoubtedly, such conditions as these are a very potent factor in spreading the disease, investigators, in the last few years, have found that cases are not uncommon among people who live under strict hygienic surroundings—the well-to-do and wealthy class. In my own practice I have observed many cases among the well-to-do class of people and those who live in accordance with approved sanitary regulations, as well as with the poorer or uncleanly class of people; and while earlier investigators claim that the American negro is comparatively immune to the affection, I have observed quite a number of cases among the colored people.

Tubercular diathesis is a predisposing cause by reason of the lowered vitality in such cases. Any wasting disease producing anemia is a predisposing factor. It often follows the purulent form of ophthalmia, in which case there will be a great thickening of the lids. While it is usually noticed after it has become chronic, we occasionally observe acute cases in which there are marked inflammatory symptoms and profuse purulent secretions; and in the acute forms diagnosis is usually difficult until the granulations become visible. Both acute and chronic forms are usually bi-lateral. In many cases the initial course of the disease is so insidious that the patient does not realize its presence until the case is quite well developed.

PATHOLOGY.—The changes in the palpebral conjunctiva are slowly progressive; there is a thickening of the membrane, which becomes vascular and roughened by firm pyramidal elevations. These changes are first noticed and most marked in the upper lid, and unless the progress of the

*Read before the Chattanooga and Hamilton County Medical Society August 20, 1909.

disease is early arrested, will extend to the lower lid, and indeed cases are occasionally encountered in which the ocular conjunctiva is involved in this process.

In advanced cases we observe considerable formation of new tissue in the deeper layers of the conjunctiva. Edema and vascularity of the lids frequently become quite marked, while the ocular conjunctiva becomes congested and often angry in appearance.

SYMPTOMS.—Among the early symptoms complained of by the patient will be a gritty feeling in the eye, due to the roughening of the palpebral conjunctiva. Some will give a history of the attack coming on suddenly as though they had gotten some foreign body in the eye, but on inspection we will find that it has been present for sometime. Eversion of the lid, in the early stages of the affection, will present a surface covered with small granular bodies, sometimes scattered and at times massed together. At other times, there will be found a condition representing all stages of the disease, from the acute inflammatory to the stage of cicatrization. In the latter stages of this disease the tissue is partially absorbed and partly changed into scar tissue, which, by its shrinking, occasions considerable annoyance and deformity of the lid. The roughened condition of the lids produces considerable irritation of the ocular surfaces, particularly the cornea. Superficial vascularity and ulceration ensuing.

If the disease be very severe, there will be intense inflammation, photophobia, lachrymation, drooping of the lids and inability to open the eyes widely. If the inflammation be great, there will be excessive discharge, and the cornea will become involved early, producing a chain of symptoms which most practitioners dread to encounter. Such cases require prompt and vigorous treatment, else blindness may eventually follow.

We sometimes observe the trachoma granules deeply imbedded so that they are almost imperceptible. By the use of small, flat, electric diagnostic lamp in a dark room, by rolling the lid back over it, the granular formations can be distinctly seen. In this way an earlier diagnosis can sometimes be made, which is a decided advantage in instituting early treatment. The swelling of the lid causes more or less drooping by their increased weight. The more acute the inflammation, the more profuse will be the muco-purulent discharge.

DIAGNOSIS.—In diagnosing these cases, there are a few points which are characteristic. The drooping and thickened lids, the small trachoma granules, in tarsal conjunctiva, and in follicular variety, enlarged follicles in retrotarsal folds, hypertrophy of the conjunctiva, with marked discomfort when eyes are used.

TREATMENT.—The treatment must be directed to the reduction and absorption of the granular formations. In this there are several modes of procedure.

The best results are usually obtained by the frequent application of astringents, and, in some cases, strong caustics may be found useful. Some ophthalmic surgeons prefer weak solutions of nitrate of silver, protargol, argyrol, or other silver salt preparations, while others find equal parts of boro-glyceride and glycerine serviceable. The mechanical expression of these granules by the roller forceps, in some cases, is of decided advantage, and will frequently shorten the course of the disease very materially. This process, however, is very painful, and if an extensive area is to be treated, a general anæsthesia will be found most practicable. However, local anæsthesia will sometimes suffice. Ten to thirty drops of a one per cent solution of cocaine hydro-chlorate injected under the conjunctiva will often produce suffi-

cient anæsthesia to make it practically painless.

The grattage form of treatment in some cases produces excellent results, but is rather severe, and unless accompanied by a general anæsthesia, is not extensively made use of at present. I believe, however, that the time is not far distant when this form of treatment will be extensively used in the more intractable cases. In the astringent form of treatment—that is, by the application of astringent remedies—the first procedure should be the thorough cleansing of the conjunctiva and external surfaces of the lids, of all secretions by the generous application of a warm antiseptic solution, preferably a solution of boracic acid in a strength of ten grains to the ounce. With the head well thrown back, preferably in a reclining position, with a generous piece of absorbent cotton, gauze or towel, held firmly against the head at the outer canthus to absorb the solution as it is being used, and the thumb and fingers retracting the lids, the warm solution should be slowly poured into the eye and over the lids with a large dropper or syringe—about one-half ounce being used for each eye.

After the eye and face have been dried of the solution, a four per cent or five per cent solution of cocaine should be instilled into the eye, after which, the patient is directed to look downward, the upper lid is to be well everted, the astringent solution should be applied with a cotton-tipped applicator. Strong caustics should be used in the same way as astringent preparations, but great care should be taken that none of it touches the cornea, else a nebulous condition may be produced. The excess should be immediately washed off with boracic acid or normal salt solution while lids are still everted. This treatment should be repeated daily until the disease is well under control, when a less frequent treatment will suffice. After a

thorough cleansing of the eye with a boracic acid solution, and the exposure of the granular formation by the eversion of the lid, it is frequently found advantageous, in place of using astringents or caustics, to massage the affected parts with the end of the finger, covered with a piece of antiseptic gauze previously saturated with boracic acid, calomel or xeroform. In the roller process the treatment is as follows: After the eye has been thoroughly cleansed with the antiseptic solution and the anæsthetic has been applied, either a four per cent solution being dropped into the eye or a one-half to one per cent solution injected under the conjunctiva, as the case may seem to require, the lid is well everted and with a bone spatula under the lid, to protect the eyeball, the roller forceps are then applied to a section of the inverted lid, closed firmly and withdrawn, the rollers being corrugated in form, will squeeze out the small granules. It may be necessary to go over the same spot two or three times with the forceps in order to remove all of the granular formations. The eye should then be cleansed as before, and an antiseptic powder well rubbed in with a piece of gauze. Applications of the roller forceps should not be made oftener than twice a week, two or three applications, if thoroughly done, frequently being sufficient.

In the grattage treatment, after the eye has been thoroughly cleansed and anæsthetized by hypodermic injections under the conjunctiva, or general anæsthesia, as the case may require, the lid is everted and the area affected is scarified with the grattage knife (which consists of three or four small blades inserted side by side in a handle). The lid is then scrubbed with a stiff bristle brush, such as a toothbrush, previously immersed in a one to five hundred bi-chloride solution, after which it should be cleansed with a boracic acid solution and dressed. This treat-

ment, if thoroughly done, is not likely to need repeating. It is sometimes found necessary, where the edema is severe, to perform canthoplasty—that is, by cutting directly back toward the ear at the external canthus, with a small pair of round-pointed scissors. This will relieve the pressure of the eye ball and prevents the formation of ulcers of the cornea or the development of pannus, which so frequently accompanies this disease.

While the same results have been accomplished with the X-Ray, galvano cautery and electrolysis by some ophthalmic surgeons, this mode of treatment in the hands of the general practitioner is impracticable.

Along with any of these forms of treatment, particularly in anemic patients whose vitality is low, a general constitutional treatment should be instituted, and their mode of living and hygienic surroundings should not be neglected.

On account of the high degree of infectiousness of trachoma, it is the duty of every physician to caution his patients about their mode of living and enjoin extreme cleanliness, with particular emphasis on the use of handkerchiefs and towels.

This brings us to the most important sequela of trachoma.

PANNUS.—Primarily, it is an affection of the corneal epithelium, which is soon followed by the involvement of the deeper layers of the cornea, the result of trachoma. It is characterized by sub-epitheal infiltration of cells and distension of capillaries, forming a fine, tortuous net work, extending from above downward over the cornea, partially or completely covering it. This may be either due to the irritation from the granules against the cornea, by the pressure of the lid, or extension of the trachomatous process to the cornea. It is usually produced, however, by mechanical irritation. As a rule, pannus does not present itself until the course of trachoma

is well developed and the inner surfaces of the lids are considerably roughened, when abrasions of the superficial layer of the cornea are quite frequent. It sometimes develops rapidly with intense hyperemia and causes severe photophobia and blindness within a few weeks. If the trachomatous process has produced cicatricial bands and left the lids deformed, with disposition to curve the lashes inward and keep up corneal irritation, pannus may remain after trachoma has disappeared.

The distinguishing features of pannus are, innumerable small blood vessels, tortuous in their course, running down through the cornea. It may involve only the upper part or all of the cornea. If much of the cornea is involved, or if the disease is not early arrested, there will be changes in the corneal epithelium, resulting in haziness of the tissue, which is rarely entirely absorbed after the disease has been arrested. The younger the subject, the better will be the chances for the complete absorption of the exudate.

The treatment necessarily resolves itself into arresting this vascular development and relieving the pressure of the lid. While the milder cases may respond to properly selected astringents, the more severe forms become surgical. When it becomes necessary to resort to surgical measures after the eyes are properly cleansed, the lids are held apart by a speculum. After the eye has been cocaineized, a fold of the conjunctiva near the cornea is grasped by the fixation forceps and divided by scissors. In case of partial pannus, a band of cicatricial tissue is cut away with the scissors; but if the pannus be general, peridectomy should be performed, which consists in a complete circular zone being cut away, including the sub-conjunctival tissue down to the sclera entirely around the cornea. This forms a dyke of cicatricial tissue against the convergent vessels. In less severe forms, or-

dinary peritomy will sometimes suffice. This consists in merely dividing the conjunctiva at the corneal margin for its entire circumference.

Following peridectomy, it will appear

that matters have been made worse, but usually satisfactory results soon follow. Either form of this treatment requires strict antiseptic precautions and persistent care.

ECLAMPSIA.*

C. L. GOODRICH, M.D., FAYETTEVILLE.



DEFINITION.—According to Edgar, "Eclampsia is an acute morbid condition, making its advent during pregnancy, during labor, or the puerperal state, which is characterized by a series of tonic and clonic convulsions, affecting first the voluntary, then the involuntary, muscles, and accompanied by complete loss of consciousness, ending in coma, or sleep."

Frequency.—Hirst states that it occurs once in three hundred cases, but by others it is seen more frequently. **Etiology.**—considering as we do that eclampsia is only a phase of the toxemia of pregnancy—let us see what is meant by that term.

Edgar defines toxemia of pregnancy as "a state of the blood and metabolism, possibly arising from the hepatic insufficiency to which the pregnant woman is strongly predisposed; expressed most commonly by trivial ailments, but exceptionally by serious, severe, and even pernicious affections—such as acute yellow atrophy of the liver, pernicious vomiting and eclampsia—conditions which, while once thought to have nothing in common, are now seen to be closely related."

The pathology of all these conditions lies chiefly in the liver and kidneys, and assumes either a degenerative or a true necrotic type, according to the degree of

advancement. In the milder cases, after recovery, it is found that there was simply a cloudy swelling as an evidence of the degeneration that threatened.

In studying the pathology of the toxæmia of pregnancy and eclampsia, as reported by Dr. J. E. Welch in the October 23, 1909, issue of the *J. A. M. A.*, I was particularly impressed with similarity of both the macroscopical and microscopical findings in the cases diagnosed toxæmia and those pronounced true eclampsia; in fact, the *post mortem* findings were so similar as to make it impossible to say which case had the eclampsia and which did not, without the history of the case, showing conclusively to my mind that both are but phases of the same morbid process that is present in the liver, kidneys, and the spleen.

1. Dr. Welch gives us a summary of the liver changes in his cases, as follows:

"The liver lesions in eclampsia are not uniform. Pregnant or post-partem women dying from convulsions may have hemorrhages in the liver, central necrosis, general autolysis or cloudy swelling in the liver.

"2. The liver lesions in toxæmia of pregnancy are not uniform. They may be either hemorrhagic or central necrosis, both of which are found in eclampsia.

"3. The hemorrhagic lesions are produced by liver and placental cell emboli, thrombi, found from blood plates and

*Prepared for meeting of Middle Tennessee Medical Society, Springfield, November 19, 20, 1909.

fused red blood corpuscles and by a solution of vascular endothelium. Heightened blood pressure increases the extent of the hemorrhages.

"4. The agent, producing the hemolysis and general cell destruction is probably an enzyme."

In the further study of the article of Dr. Welch it is seen that the kidney lesions are practically identical and consist of changes varying from a fatty infiltration to a true parenchymatous degeneration or even necrosis, in some fatal cases.

Another lesion that is frequently seen in both conditions is hemorrhage in the brain, usually from the floor of the fourth ventricle. Other hemorrhages due to emboli may be seen in the lungs, spleen, or as petechiae in the skin.

Symptomatology.—There is usually a history of previous kidney insufficiency, though this is by no means always the case. The attack of eclampsia, as the name would indicate, comes on abruptly, but there are usually some prodromal symptoms—such as sharp pains in the head or epigastrium, nausea, uneasiness, muscular twitchings, pain under clavicles or shoulder blades, irregularities of vision, and either insomnia or stupor.

Occasionally dull pains in the thighs or back are precursory symptoms, especially when the kidney functions are inefficient and constipation is present. The attack itself comes on with vacant, staring appearance of the eyes, pupils contracted, eyelids twitch, eyeballs roll, mouth pulled from side to side, and head jerked first to one shoulder then to the other. The spasm then affects the trunk, the arms and fingers become acutely flexed, the trunk bent backward upon itself, and the whole body is shaken with clonic then tonic, and back again to the clonic type of convulsions. The spasmodic condition becoming gradually less

severe, until there is only an occasional twitch of the muscles about the nose and mouth, the patient then passes into a state of coma, which may last a half hour or more with recurring convulsions, or the coma may deepen and the patient die without recovering consciousness. Again the convulsions may cease abruptly with the termination of pregnancy, or the heroic use of antispasmodics.

If the comatose condition is marked, the danger is very great; and conversely, if the coma is not marked and the patient recovers consciousness, and especially if labor has been terminated, the outlook is much better.

Occasionally, however, a patient apparently recovers from the eclamptic seizure only to die later from uræmia, due to parenchymatous nephritis, or to acute yellow atrophy.

The differential diagnosis is usually not difficult, but seen in the stage of spasms, without a competent history, it is possible to confuse it with acute cerebro-spinal meningitis, hysteria-major, apoplexy, uræmic convulsions proper, hydrophobia, and tetanus.

In acute meningitis, the spasmodic condition begins in the back of the neck, and to a large extent remains local; while in eclampsia, the convulsion is general, with the exception of the lower extremities.

In hysteria-major there is usually a neurotic history, and there is no temperature, whereas, in eclampsia, the temperature progressively rises if the condition is unrelieved.

Again, in hysteria, there is no true comatose condition following, and of course the spasmodic condition is much lighter and more clonic in character.

In apoplexy there is no fever, the ages of the respective cases differ; the eclamptic condition occurring most often in the young primipara, while the apoplectic

seizure is seen most often in patients approaching the climacteric.

Again, in apoplexy, the pulse is usually very slow; the converse being true in eclampsia.

Uræmic convulsions proper may, but do not often, occur, according to Edgar, in the pregnant woman, but are distinguished by lack of fever and the pre eclamptic stage, and by a history of Bright's disease preceding pregnancy.

Hydrophobia and tetanus might be confused with eclampsia, but in the former we have an interval of consciousness instead of coma between spasms, and the prodromal symptoms usually point to the cause.

In tetanus, also, the spasm is not immediately followed with coma, and the spasms are tonic in character from the beginning, especially the muscles of the face. . . .

The prognosis depends upon the degree of real injury to the tissues affected, the rapidity with which labor can be terminated, and the success we have in eliminating the toxæmia producing it.

In every case it should be guarded and the family impressed with the gravity of the case, both during and after the attack, until at least two weeks have elapsed. . . .

Mortality.—The maternal mortality averages about 30 per cent and the fetal mortality is given as 50 per cent.

The treatment, of course, should be divided into prophylactic and curative, the former being very important, indeed. Until the exact poison is isolated, it will continue to be uncertain as to when we may expect the development of eclampsia, and when we may be certain that we can prevent it.

However, there are a few danger signals, which such men as Hirst, Edgar, Davis of Chicago, and Welch of New

York, regard as of sufficient importance to cause us to take such steps as are possible to prevent the toxæmia from becoming more grave in character. The first of these is albuminuria that is not transient in character, and a diminution of the urea compounds. These urinary findings are not always present, however, either before, during, or after the eclamptic seizure, though usually if frequent urinalysis is made these conditions will be discovered.

Coincident with these kidney findings, especially if the quantity of urine is noticeably diminished, we nearly always find a fast pulse, with high tension, and in many cases general edema is marked.

Headaches and gastric disturbances frequently seen, especially in the latter months of pregnancy, and unexplained impairment of vision, are indicative of impending danger and should cause an immediate investigation.

With the above evidences of a toxæmia we should do all in our power to increase elimination by all the emunctories, and stop nitrogenous foods; in fact, Edgar recommends an absolute milk diet under these circumstances.

With mild laxatives and an occasional brisk purge with calomel, large doses of nitroglycerine and plenty of water for the kidneys, and a diaphoretic, like tincture of verat. viride, and an abundance of fresh air for the lungs, and mild exercise, the patient can often be carried over the danger line, provided we begin our work in time. If the preventive measures do not result in marked benefit to the patient, it is the consensus of opinion of the leading authorities of America, though in opposition to the teaching of English authors, that labor should be induced as rapidly as possible.

In some cases this is easily accomplished with the Bossi or some other form of dilatation and then the applica-

tion of forceps. In others, more radical measures are necessary.

The treatment of the eclamptic seizure itself requires the best efforts of a clear mind applied under the most exciting surroundings.

The first effort of the obstetrician should be the insertion of a towel or some other substance between the teeth to prevent the patient biting her tongue or lips.

Examine the circulation at once, and if the pulse is hard, fast and wiry, as it usually is, then give a hypodermic injection of 10 or 15 minims of tr. veratrum viride, giving inhalations of chloroform in the meantime.

While you are doing these things, note the character of uterine contractions, if there are any, and as soon as you can prepare for it, make a vaginal examination and determine the degree of dilatation and engagement, in order that you may know how to proceed.

If the cervix is two-thirds dilated, and greatly shortened, it is best according to Davis of Chicago, to manually complete dilatation and deliver the child at once under chloroform anæsthesia. But if the pains are very inefficient, the cervix unyielding, and the presenting part unengaged, it is best to employ all of your efforts in an endeavor to hasten elimination by the emunctories, control the convulsions with chloroform, and ignore the child for the present. This is best accomplished by high rectal hot saline, enemata, first washing out all fecal material, then leaving one or two quarts for absorption.

If available, lavage of the stomach with hot salt solution will aid materially in eliminating toxæmia. After removing the stomach contents, it is well to introduce through the tube 5 or 10 grains of

calomel or put 2 or 3 drops of croton oil on the tongue.

For the stimulation of the excretion by the skin, Edgar recommends the tinct. of veratrum viride, and glonoin used in connection with a hot pack to the body and an ice cap to the head; he and Hirst both, in no unmeasured terms, condemn the use of pilocarpin, because of its tendency to increase edema, which is usually present, and given by McPherson in a recent issue of the *Journal A. M. A.* as one of the most important danger signals in the pre-eclamptic period.

Saline infusion following or without venesection, materially aids the kidneys in getting rid of the toxæmia, and the continuous hot colonic irrigation will also help materially in stimulating kidneys, skin and bowels.

Morphine, though giving very favorable results as used by some authorities in the control of the convulsions, to my mind is contra-indicated, and should not be used; but in small doses, combined with scopolamine hydrobromate, might be of service in post partem eclampsia.

The great desideratum, as I see it, is delivery, if possible, of the products of conception. This may be done by delivery with forceps, abdominal or vaginal Cæsarian section or by induction of labor with bags, etc.

Of these, in the majority of cases, I believe that manual dilatation with high forceps delivery will give the best results, and vaginal Cæsarian section with podalic version the next choice.

Of course, after delivery, we should continue our efforts to promote elimination, not forgetting that the patient may die of shock or uræmia many days after apparent danger has passed.

DEATH FROM ETHER ANAESTHESIA.

W. M. M'CABE, SUPERINTENDENT AND SURGEON NASHVILLE CITY HOSPITAL.

THE patient was a negro woman about 45 years of age, apparently healthy, except that the cervical glands on both sides of the neck had been enlarged for about ten years. The enlarged glands were superficial, deep and very large, but they were not adherent to each other, and very little to the surrounding structures. Ether anaesthesia by the open method was induced, and the patient struggled some, but not more than is sometimes seen. The pulse and respiration were rhythmic and the patient was doing as nicely as any patient I have ever seen. She made the remark before going upon the operating table, however, that some doctor had treated her for goiter, and had told her never to be operated upon, because she would die. In hospital work these remarks are so frequent that little attention is paid to them.

An incision about two and one-half inches in length was made over a gland along the anterior border of the right

sterno-mastoid muscle, and all the glands were dissected out of this side of the neck with the fingers. The incision was closed, except at the lower angle, where a gauze drain was inserted. A similar incision was made on the opposite side of the neck and the glands dissected out in the same manner. No instruments were used after the first incision, and the glands were dissected out entirely with the fingers. Just after the last gland had been removed, and the wound closure was about to be begun, respiration ceased, but the pulse was barely perceptible and soon disappeared. Everything was done to resuscitate the patient, but to no avail. I attribute the death of this patient solely to the anaesthesia, as no vessels or nerves, not even a muscle, was cut, and the operation had not consumed more than thirty minutes; in fact, Dr. Reginald Stonestreet, who referred the patient to the hospital, had remarked upon the simplicity of the dissection.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
Geo. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

MEDICAL EDUCATION AND LEGISLATION.

THE American Medical Association will hold a special conference on Medical Education and Medical Legislation in Congress Hotel (formerly the Auditorium Annex), Chicago, February 28, March 1 and 2, 1910. In order that all those who are interested in the questions which will be discussed during this conference, I herewith give the official invitation issued by the Council on Medical Education and Committee on Medical Legislation:

To the Officers and Members of State Medical Licensing Boards; to the Officers of State Medical Associations; to Members of the National Legislative Council; to University Presidents, College Professors and others interested in Medical Education and Medical Legislation—Greeting:

A special conference on Medical Education and Legislation will be held at the Congress Hotel (formerly the Auditorium Annex), Chicago, Monday, Tuesday and Wednesday, February 28, March 1 and 2, 1910, the session to begin at 10 o'clock Monday morning.

On Monday, February 28th, the Council on Medical Education will hold its sixth annual conference. A report will be presented showing the present status of the medical colleges in the United States and another report giving practical tests in state license examinations. Other important topics bearing on medical education will be discussed.

On Tuesday, March 1st, there will be a joint conference on Medical Education and Medical Legislation, at which the essentials of a model medical practice act will be considered.

On Wednesday, March 2d, the Committee on Medical Legislation will hold its annual conference, discussing a National Bureau of Health, vital statistics, pure food and drugs, expert testimony, and other live topics.

You are most cordially invited to attend this conference and to participate in the discussions.

COUNCIL ON MEDICAL EDUCATION,
N. P. Colwell, Secretary;

COMMITTEE ON MEDICAL LEGISLATION,
Frederick R. Green, Secretary.

CHICAGO, ILL., DEC. 1, 1909.

SPECIAL RATES.

WE have been granted the following special rates by the Southeastern Passenger Association for the Memphis meeting, April 12, 13 and 14, 1910:

"Fare and one-third, plus 25 cents, for round trip from all stations in Tennessee located on the lines of the Illinois Central Railroad, Louisville & Nashville Railroad, Nashville, Chattanooga & St. Louis Railway and that portion of Tennessee Central west of Nashville.

"Fare and one-half, plus 50 cents, for the round trip from all stations in Tennessee located on the lines of the Cincinnati, New Orleans & Texas Pacific Railway, Mobile & Ohio Railroad, Virginia & Southern Railway, South-

ern Railway, and that portion of the Tennessee Central east of Nashville."

We will issue later special instructions as to purchase of tickets and taking of certificates of full fare paid from your local station to Memphis, so that your certificates can be properly signed for return fare at reduced rates.

BOOK REVIEWS.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare, M.D., Professor of Therapeutics in the Jefferson Medical College of Philadelphia. Thirteenth edition, thoroughly revised. Octavo, 951 pages, with 122 engravings, and 4 full-page colored plates. Cloth, \$4, net; leather, \$5, net; half morocco, \$5.50, net. Lea & Febiger, Philadelphia and New York, 1909.

The success of any text-book is measured, in the main, by the demand which it creates and meets, in its succeeding editions; hence we conclude that this book is a most deserving one, this being the thirteenth edition. There is no one subject of such direct and practical use to the general practitioner as a discussion of therapeutics, both general and special.

A thorough consideration of the general principles underlying therapeutics, as to action of drugs and methods of administering, under which is given the best, most practical and most desirable means and measures, with reasons,

why and manner of administering or applying remedies in various forms, is a prime feature of the work.

Pharmaceutical preparations are defined in such an attractive way as to impress this feature, which is an important one, while the classification of drugs will doubtless prove of great interest and advantage, especially to students. Prescription writing, the art of which is much neglected, is considered at sufficient length and concisely stated. Drugs are considered alphabetically, and all of those of recognized value are discussed physiologically, therapeutically, and in addition highly toxic drugs receive special consideration. Many of the newest drugs are studied and valuable suggestions as to adaptability and uses are given.

A feature of the work, which is most helpful and attractive, is the comprehensive presentation of remedial measures other than drugs—such as antiseptics, antitoxins, cold, heat, disinfection, mineral springs and climate, rest cure, transfusion and venesection. All of these are important, and the practical suggestions and illustrations as to how to make use of them are interestingly set forth.

Feeding the sick, a subject of vast concern to all, is presented in such a concise and practical way as to place the physician in a position to give the necessary details of preparation of special diets for the sick, young or old.

That part of the book devoted to diseases and their methods of treatment, with a practical application of drugs and therapeutic measures will prove of great help.

This book is interesting, instructive and reliable, and one to be desired.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., MARCH, 1910

No. 11

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee..... Shelbyville.

C. H. DAVIS, M.D., East Tennessee..... Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D.... Chairman, *Ex-Officio* Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan

GEO. H. PRICE, M.D..... Editor, *Ex-Officio* Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D..... Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D.... Covington.

Alternate, J. D. BREWER, M.D..... Newbern

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL:

A. B. COOKE, M.D., Nashville.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman*..... Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELETTE, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

COMMITTEE ON TUBERCULOSIS.

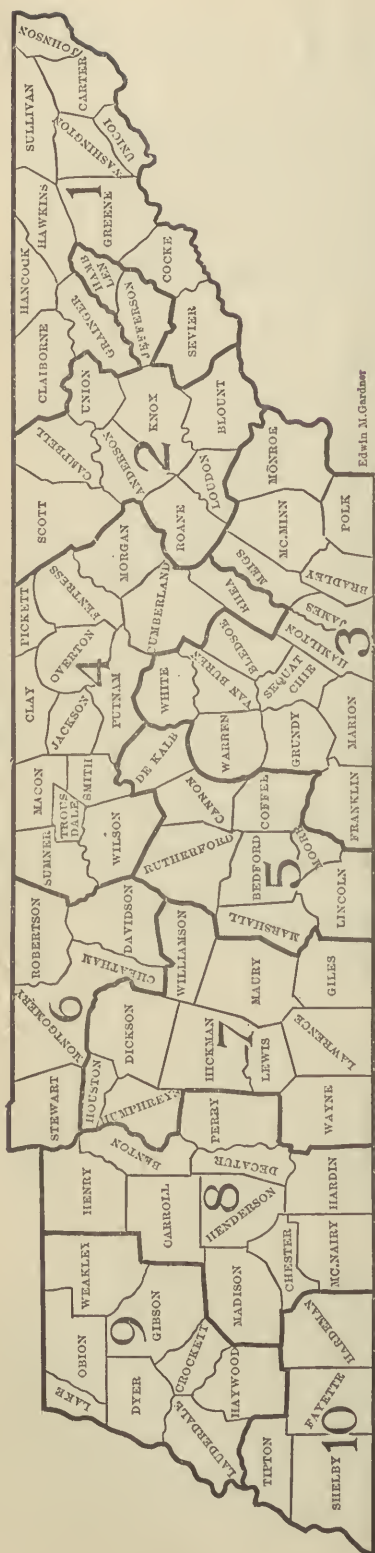
H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.
JERE L. CROOK, M.D., *ex-officio*.....Jackson.
GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.
Secretary, JOHN CLEAR, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.
Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSON COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.
Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.
Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.
Secretary, F. A. MCCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.
Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.
Secretary, I. E. PERKINS, M.D.....Henderson.

CLAIBORNE COUNTY.

President, M. B. CARR, M.D.....Tazewell.
Secretary, B. M. DAVIS, M.D.....New Tazewell.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EVE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. MCKEETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Mosheim.
Secretary, S. W. WOODYARD, M.D.....Greenville.

HAMLEN COUNTY.

President, W. E. HOWELL, M.D.....Morristown.
Secretary, T. L. SMITH, M.D.....Morristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bolivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D.....Whitleyville.
Secretary, E. W. MABRY, M.D.....Meigsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D...Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. MCNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewisburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarksville.
Secretary, J. C. MORRISON, M.D.....Clarksville.

MORGAN COUNTY.

President, A. S. WILTSIE, M.D.....Lancing.
Secretary, G. R. TODD, M.D.....Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.....Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, K. E. ROGERS, M.D.....Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. G. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, DR. L. S. TILSON.....Erwin.
Secretary, DR. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmersville.
Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
Secretary, K. S. HOWLETT, M.D.....Franklin.

ANNUAL REPORTS FROM COUNTY SOCIETIES.

To the Secretaries of County Medical Societies:

LET the Secretary of each County Society note the following facts: Our next annual meeting will be held in the city of Memphis, beginning on the second Tuesday of April and lasting three days—the 12th, 13th and 14th. The reports from County Secretaries showing each member, postoffice and other data, with dues for the coming year—\$2 for each member—should be in the hands of the Secretary of the Association at least thirty days prior to the meeting, in order that a general report of the condition of the Association and its affiliating County Societies may be compiled in ample time for the annual meeting. At the proper time, special instructions will be mailed to each County Secretary, with proper blanks for making County reports. Between this and that time, all information concerning members should be properly collected and arranged, so that the blanks can be filled out without trouble and returned promptly to the Secretary. Please

remember that any money for dues of members should be sent to the Treasurer of the Association, who is Dr. W. C. Bilbro, Murfreesboro, Tenn. All information concerning members who have died since the last meeting should be collected, put in proper form, as a report from the local County Society, with whatever resolutions concerning those members which have been adopted by your local County Society. This information should be collected, prepared properly, and sent to the Chairman of the Committee on Memoirs, who is Dr. A. F. Richards, Sparta, Tenn. This information should be in the hands of this Committee before the meeting of the Association; in fact, it should be sent to the Chairman or some member of the Committee thirty days before the annual meeting, so that this Committee can properly compile this report. (See Committee on Memoirs, first page in JOURNAL.) All of these matters are important and should be attended to now, so as to avoid complications at the time of the meeting.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., MARCH, 1910

No. 11

THE CORRECTION OF UTERINE DISPLACEMENTS.*

C. N. COWDEN, M.D., NASHVILLE.

THE business world has learned the value of frequent inventories of the stock on hand, going through everything from time to time, with a view to discarding the old-fashioned, out-of-date and shop-worn articles to make room for the new. Just so it would be well if we of the professional world would follow their example and take more frequent and accurate inventories of our work, and review carefully the results that we are getting from certain remedies or procedures, and be equally as anxious as the business man to discard means and methods that have proven to be either useless, harmful or obsolete.

Coming down a little closer, the time has certainly come for the gynecologist to take a retrospective view of the work that has been done, and decide honestly and candidly what operative procedures have been successful, and proven beneficial to woman as a whole. Also what methods need revising or relegating entirely to the museum of surgical antiquity.

No region of the anatomy offers so fruitful a field for experimentation, or for the first efforts of the novice, as the female pelvis, on account of the freedom from danger, because if he can't do what he started out to do, he can do something else equally as efficacious or harmless.

Again, the practical immunity of the pelvic peritoneum from fatal peritonitis, making it possible for the patient to recover from a great variety of operations with a very low mortality. The ease with which the round ligament can be reached by three different routes has given rise to so many different methods of shortening this little cord that even an enumeration would tax your patience.

A few years ago oöphorectomy as a routine measure held the center of the stage. It was put forth and employed extensively for the relief of all pelvic disturbance, whether connected with the ovaries, or not; but today we find few, if any, gynecologists advocating its use as the best surgical procedure, except in cases where the ovary is entirely destroyed.

Safe, sane and conservative surgery has taken its place, as these organs are now never removed except for extreme cause.

Following the surgical fad, it was but natural that some other procedure should take its place, and so we began to suspect the displacements of the uterus as being the entiological factor in the production of pelvic pathology, and demanded that it be "hung up" by one of at least fifty different methods.

And this very fact that we have this great number of surgical operations de-

* Read before the Nashville Academy of Medicine.

vised for the relief of displacements of this organ is cited by many leading gynecologists as good evidence that the results have not been satisfactory, and the question is still open for discussion.

Going still further, the procedure or operative measures for the correction of displacements have been called into question by not a few eminent gynecologists and condemned severely by quite a number of others.

When I speak of displacements of the uterus I mean the retrodisplacements, and am not considering the antiversions or flexions that, with few exceptions, exist pathologically only in the minds of the physician and surgeon.

The function of the pelvic viscera and their constant variation in size, the bladder in front and the rectum behind, of necessity the uterus that lies in between should be and is a freely movable organ. That its upper portion enjoys an extensive forward and backward movement is well understood as a fact. Again, it is a well-known fact to all gynecologists that many cases of extreme displacement cause no symptoms whatever, as was pointed out by Waite of Chicago in 39% of 1,000 consecutive cases that gave no evidence of gynecological symptoms whatever.

Waite's position is accepted by a great many other operators in this field; some who go further and say that by far the greater number of displacements produce no symptoms, and that when symptoms are found, they are due to complications affecting other pelvic viscera, and if the examination is carried far enough, that in every case these complications will be found—such as endometritis, salpingitis, oöphoritis, ovarian tumors or cysts or of the ovary.

Other conditions producing pelvic symptoms would be hemorrhoids, lacerations of the cervix, sub-involution of the uterus, beginning fibroids, etc., and that

these are the conditions that produce pelvic symptoms, and when found should have the proper treatment for their relief.

But to operate on a woman with a displacement without symptoms, just because she has displacement, is absolutely uncalled for in any case, and is the conclusion Waite draws from an extensive experience.

If we accept Schultz' opinion of a normal position of the uterus, "that of perfect mobility," it would at once do away with a large number of operations, as it certainly would not be claimed that a uterus was in a more normal position fixed to the anterior abdominal wall, or anchored tightly by some ligaments to the pelvic walls, than to have it free to move and change position when necessary to accommodate the size and position of the neighboring organs. He emphasizes the fact that "the home of the uterus is in the pelvis," and leaves it only to perform the physiological function of pregnancy, after which it returns, unless prevented by some pathological condition, or the ruthless hand of the surgeon.

They again call our attention to the many dangerous results or conditions that follow some of these so-called useless operations—such as:

1st. Weakening of the abdominal wall following an abdominal section, that is followed by ventral hernia that leaves the patient worse off than when she fell into the hands of the surgeon.

Again, should pregnancy occur in this condition of fixation, that serious symptoms may have to be met on account of interfering with the uterus rising out of the pelvis with great tendency to abortion. And if she goes to full term, dystocia with instrumental delivery is nearly always the case, sometimes necessitating a Porro or Caesarian section for relief.

In a recent paper, Lynch of Baltimore

collected a large number of cases of dystocia following ventro-fixation and suspension, among twenty-one cases of Cæsarian section and eleven cases of rupture of the uterus.

Palmer Dudley, after reviewing the literature on the subject of the danger to the obstetric patient, and also the possibility of a fatal illness following these operations, closed with the statement that fixation or suspension is a pernicious procedure and should never be employed as a surgical remedy.

This same school of objectors admit that the various methods of *shortening* the *round* ligaments cannot be classed as dangerous operations, but claim that the worst that can be said of them is, they are unnecessary, and uncalled for; that the very numerous and later methods of shortening the ligaments are a severe criticism of the Alexander operation, and unless it had been found lamentably wanting, there would be no excuse for the innumerable and more objectionable methods. Hence this school of operators can be summed up as follows: That surgical procedure in displacements of the uterus are unnecessary and unsafe, and have not proven successful in a sufficient percentage of cases to warrant their continuance.

But the above is far from being the experience and opinion of many of the leading gynecologists of today, whose ample opportunity for observation and unlimited experience is summed up as follows by Noble, at a meeting of the Obstetrical Society of Philadelphia in 1906:

"Admitting," he says, "that the uncomplicated displacements of the uterus cause fewer symptoms than the same displacements complicated with other morbid conditions of the pelvis," he rejects in toto the claim of certain gynecologists that uncomplicated cases of retro-displace-

ments give rise to no symptoms and require no treatment.

He claims that retro-displacement of the uterus is a morbid condition, and in all cases if not attended with symptoms at the time, it sooner or later will be; that the displacement is the cause of the symptoms, *per se*, and a predisposing cause of congestion of the uterus resulting in a hypertrophy of the endometrium with leukorrhea and prolapse and congestion of the ovaries, with cystic degeneration, or they become cirrhotic and functionless prematurely.

Uncomplicated displacements of the puerperium lead invariably to subinvolution of the uterus, leukorrhea and profuse menstruation or hemorrhages.

Therefore he argues that so-called uncomplicated displacement of the uterus should be cured, not only to relieve symptoms, but to prevent ensuing complications that will surely arise and be attended by all the manifestations of this disorder—such as bearing-down pains, backache, painful menstruation, leukorrhea, etc.

I am well aware that it is a fact that some women experience no ill effects when the malposition is discovered, and who carry their wombs in this abnormal position throughout life without complaint, but these cases are not so frequent as to warrant the statement that they cause no trouble and need no treatment.

An abnormality that one woman will bear without complaint may reduce another with less stamina of her nervous system to a state of invalidism. To successfully maintain that there are no indications for restoring a retro-displaced uterus, that is causing no symptoms, it must be shown that the function of the organ is in no way interfered with, or that it will functionate normally in one position as in the other. A position that is wholly untenable and indefensible.

Hence, I take the position that if a woman has B. Dis. without symptoms, it is only a question of time till she will have, and she is entitled to the radical cure before irremediable complications arise. If the patient won't accept the radical operation, what resources does surgery offer us? The woman should ever be given the choice between palliation and a cure. Should she elect the pessary, with all its annoyances, it is her right, since operative measures carry risks that should at all times be fully explained to her.

If she selects the pessary, all we are now justified in doing is to give due attention to the relief as best we can of the accompanying endometritis, and any of the other complications, such as lacerations, or erosions of the cervix, and having replaced the uterus and inserted the pessary, advise her of the necessity of returning at intervals to have it readjusted, cleansed or altered in shape or size.

But all of us well know that the cases where the pessary can be used with benefit or permanent good are few and far between. The uterus must be freely movable, with no adhesions, and one that can be easily replaced, with no diseased condition of the adnexa.

Such cases are subinvolution of the uterus following labor or abortion where we want to hold the uterus in place till involution takes place, or where the patient is very much run down from some acute condition, with ligaments too flabby to support the uterus till general health can be restored and benefited.

Any one who reads carefully T. A. Emmet's article on indications for the use of the pessary and follows his direction will always have good results when intelligently used. A properly fitting pessary gives no pain or discomfort in cases where it is clearly indicated, and if the

woman elect she should have the benefit of a trial before surgical measures are insisted upon.

But by logical sequence the treatment of these displacements has resolved itself practically into a surgical one. Our forefathers, who were masters of the art of selecting and adjusting the pessary, rarely, if ever, opened the abdomen, and therefore were not familiar from actual observation with the altered anatomical conditions or the complications associated with displacements.

Furthermore, their idea of the pathology of the parts was erroneous, and led to a wrong therapeutic plan, such as laying great stress upon the tampon, posture and massage. But today we know it is one of the most common causes that impels the women to seek medical advice, and it is one of the easiest of all pelvic disorders to diagnose and to relieve, for there is scarcely a doctor practicing medicine who does not feel himself fully capable of making a correct diagnosis, and no surgeon hesitates for a moment to undertake the radical cure.

Many, and sometimes marvelous, are the methods advocated by different surgeons at different times. Beginning in 1850 with caustic applications to the space between the cervix and the posterior vaginal wall, advocated by some.

Then followed suturing the cervix to the posterior vaginal wall, followed later by Alexander's classical operation for shortening the round ligaments as they pass through the inguinal canals. Then came the intra-peritoneal operations, divided into two classes: 1st, Those using the natural supports; 2d, those making a new anchorage for the uterus—the one using the natural supports as the ligaments to draw the fundus forward by folding the round ligament upon itself and stitching one, two or

three folds together, or after folding the ligament into a loop, stitching it to the fundus, or pulling the round ligament through the broad ligament and stitching them together low down behind the fundus; and many other, on *ad infinitum*. In all these operations, with the exception of the Alexander, the weight of the uterus or the force that drags the uterus backward must be borne by the small end of the round ligament as it passes through the canal where it is often found to be but a few threads of attenuated tissue that is too weak to support the weight of the organ and a relapse in a short time is sure to follow.

The fixation of the uterus to the anterior ventral wall or the securing of a ligament or a suspensory ligament with the various modifications of this method, have been largely employed and has had many advocates, but it has not been found to be free from danger or objection, as in the majority of cases we substitute one pathological position or condition for another. Where a band of adhesion is stretched out it allows considerable mobility and becomes so small that it affords no certainty as to how long the uterus will be held in the anterior position, or if it becomes too large a band and forms cicatricial tissue, it will not undergo evolution and in some instances the dense band above the bladder interferes with its proper filling. These, with the interference of labor by producing dystocia, limit this procedure to only a few cases, especially those met with after the child-bearing age of the woman, or in those cases when we can be sure that the woman for some reason or other will not become pregnant. Another school of operators, headed by Goffe, trying to maintain the correct angle between the vagina and the body of the uterus, utilized the utero-rectosacral ligaments, shortening them by folding and stitching them to the

anterior surface of the sarcum. While occasionally successful, they proved to be too weak to support the organ and failure in the majority of cases was the result. Then, what is the operation of choice?

Two patients come in here tonight, each complaining of bearing-down pains when on their feet, backache or pain in back or top of head, painful menstruation, leukorrhea, etc., with all the reflex nervous phenomena so often found with these cases, and upon physical examination we find both with their wombs out of the normal position, with any one or all of the complications affecting the adnexa; operation is advised, and both accept and are operated upon.

Now, why is it that one is cured, with all the symptoms relieved, and the other, after the operation, seems to have obtained no benefit whatever, or perchance both cases were followed by failure in so far as the relief of the symptoms for which the operations were advised. What is the matter? Upon opening the abdomen, had we been a closer observer, we would have noted the fundus of the uterus lying backward, the ligamentary bands of peritoneum relaxed and flabby, the uterus heavy, with the vessels in the broad ligament enlarged and sometimes varicose. We pull the fundus forward and we note the same relaxed condition of the ligaments and peritoneal folds. Any operation that will hold the uterus in this position, or just mere correctness of the version, will not help us as regards the cure. That which is required in this particular case is elevation of the uterus in the pelvis, in order that it may assume a more normal position in regard to its vascular supply and lymph channels.

Remember that the structural changes do not take place in the pelvic tissue after the uterus is displaced as quickly in some patients as it does in others, for all do not possess the same tissue resistance to ab-

dominal influence. We can readily understand that in a long-standing case, when we have a varicose condition of the pelvic veins, and an increase of connective tissue, not only in the uterus, but in the ovaries as well, that we may utterly fail, though we may have remedied the cause and applied the appropriate after treatment to secure a return to the normal. One had been neglected too long till permanent conditions obtain, and we have no way of restoring normal functions where permanent anatomical or structural changes have taken place.

In the other patient the uterus lies backward, as in the case above, but it is adherent to the neighboring structures, possibly with tension or fullness to one side or the other. The peritoneal folds are very much thickened, allowing very little, if any, mobility of the uterus and the tubes and ovaries buried in a mass of peritoneal bands of adhesion. We find before this uterus can be pulled forward these bands of adhesion must be separated or broken up, and when it is brought forward, it is also too low in the pelvis, as was the case above, and elevation here is as essential as it was before.

Hence, that which we shall have learned from these two operations is this: that to cure a case of displacement, an operation is called for which shall lift the organ to a higher level, and maintain it there.

The external or internal Alexander operations that shorten the round ligament by drawing it out through the canal while pulling the fundus forward fails to elevate the organ for the reason that the inguinal canal is lower than the plain of the normal position of the uterus, and hence the sagging of the broad ligament is not overcome. In order to accomplish this elevation the Gillian, Simpson, Montgomery operation was devised, and, briefly, is done as follows: The abdomen

is opened, the round ligament of one side is picked up about one and one-half inches away from the uterine attachment. A traction strand of silk is passed beneath it and the two ends threaded in a ligature passer. The latter is now introduced through a small buttonhole opening in the broad ligament, following the course of the outer end of the round ligament. When the abdominal wall is reached the point of the carrier is brought out through the muscular layer and fascia toward the edge of your wound. The ends of the strand are now loosed and carrier withdrawn. Traction on the strand drags the loop of round ligament out through the opening just made and the end of the loop is sutured to the aponeurosis. The uterus is anchored by its normal supports and occupies and maintains a higher level in the pelvis. The organ is left freely movable, there are no points in the abdominal cavity for adhesions or to endanger strangulation of coils of intestines, and the normal physiological functions of the organ are in no way interfered with. The Pfannensteil incision is the one best adapted to reach the ligaments and anchor same in their new position.

Coffey accomplishes the same thing by stitching the round ligaments one inch from the uterus down the anterior surface of the body to the base of the utero vesical ligaments and looping it back again, shortening them at least two inches, and at the same time folding or doubling the broad ligament upon itself till all the slack is taken out, care being taken to avoid dragging the fundus of the bladder into the reduplications or folds. The operation is simple, easy to get at, and is only a modification of the Baclic Emmett operation of folding and stitching the round ligament to the front of the uterus. These are the operations that we have used at the Woman's Hospital the last three and a half years upon the

largest number of cases, operated upon for backward displacement, and the results have been very satisfactory.

In conclusion, certain it is, if the ideal operation for retro-displacements of the uterus has been found, it consists of some procedure or method which not only utilizes the normal supports without interfer-

ing with their functions for the purpose of pulling the fundus forward at the same time, so taking the slack out of the broad ligaments in a way that elevates and maintains the organ in its normal position. The two operations outlined above are admirably adapted to accomplish this result and seem to be the operations of choice at the present date.

WOMAN IN THE FIELD OF MEDICINE.

DORA LEE WILDER, M.D., KNOXVILLE.

OF the many occupations to which women have recently been admitted, in none is there a greater demand for her services and in which she has more proved her ability than the medical profession.

The roadway is often rough; ruts there are to be avoided and long hills to be climbed; rivers to be bridged; but everywhere we find the landmarks of those who have gone before—landmarks of courage and persistence, the overcoming of popular prejudice, stepping-stones of overpowering obstacles and opposition.

But today there is no question as to her rights; she stands on an equal plane with her brother physician. This condition has been made possible through the endeavor of the pioneer women in medicine, who so valiantly championed their cause, and proving its justice, opened the way for their march of progress.

Of these pioneer women, Elizabeth Blackwell heads the list. It was her efforts that opened the way to the thousands of women who followed in her footsteps. She was the first woman who ever received the degree of M.D. in the United States. She began her reading with Dr. John Dixon, Asheville, N. C., but received no encouragement from him, he being of the opinion that the minds of women were wholly incapable of mastering a learned

profession; but her energetic temperament and strong desire for the acquisition of knowledge persuaded her on, and after vainly endeavoring to be admitted to schools in Philadelphia, New York and Boston, and ten other schools not so well known, she heard of the school at Geneva, N. Y.

The faculty of the Geneva College, on receipt of her application, laid the proposition before their students, leaving the decision with them. The young men unanimously assented to the reception of the new pupil and pledged themselves that no conduct of theirs should ever cause her to regret the step she had taken. It is to their credit that they faithfully observed this pledge during the subsequent collegiate years passed among them.

In January, 1849, she took her degree of M.D., and in sixty years since then there has been half as many thousand conferred.

In 1865 Elizabeth Garrett received the first diploma in England, so we were sixteen years ahead of our English sisters, although Dr. Blackwell was English born.

Dr. Hannah Longshore is another pioneer having graduated in 1850; she opened her office in Philadelphia only to find that the men physicians were in league against her, and at their request the druggists of the city refused to sell

her drugs. Not one of the physicians would meet her in consultation. It was years before any of these early physicians were admitted to any medical society.

The difficulties that hindered the practice of these early physicians seem almost incredible. No courtesy was shown them in the few schools that admitted them, so they formed a college for themselves in 1850 at Philadelphia. The Woman's Medical College of Pennsylvania was the first school in the world regularly organized for the education of women in the medical profession.

In 1865 the Woman's Medical College of New York was founded; soon other schools sprang into existence, but owing to the public opposition and meager attendance they did not reach the high standard maintained by the best colleges for men.

The first twenty years was slow climbing, but persistence wins, and one university after another opened its doors to women. But popular opinion is hard to overcome, and it took years to convince the public that women who would seek to enter a man's profession must of necessity be masculine, unsexed, indelicate and unworthy of esteem. Women, who should have been the best patrons of our pioneer sisters, were so influenced by adverse criticism that they offered neither support nor encouragement. Patients came chiefly from the poor; yet the prejudice, which was overwhelming in 1850, has not entirely disappeared, although they are admitted to all the medical societies and to all colleges and universities that count. Women were admitted to the academic department of the University of Michigan in 1860, some years after the first woman had graduated in medicine, and a significant change in public sentiment had followed, yet when a leading professor in the school of medicine at Ann Arbor was asked if

women were to be admitted to the medical department also, gave back the positive reply: "No, thank God; they can only enter there in the pickling vat."

Another twenty years had not elapsed before they were graduating them from there. There are now fifty medical colleges in the United States admitting women; nine of them separate schools for women.

Women physicians are found everywhere; seven hundred are reported practicing in Russia, over a thousand in the British Empire; they are found in China, Japan, India, Persia and Egypt, and it is estimated that there are more than ten thousand women physicians practicing in the United States.

There is no question about her rights; she is admitted on an equal footing with her medical brethren and her services are demanded by law in many institutions for women and children. Our brethren have given us the glad hand of fellowship, and we have joined forces with his to alleviate pain and exterminate diseases. We are doing an equal share in research work and are not unknown in literature. We are also taking our share of the almighty dollar. A number of women physicians are reported as having \$10,000 a year from their practice, and some as high as \$20,000, and not very recently a case came into the divorce court where husband and wife were both physicians and she made \$15,000 per year to his \$5,000, and as it was not fitting to his pride to be the lesser financial unit he wanted to separate. I have not yet heard the decree granted by the court, but judge they will know a "good thing" when they have it, as he evidently did not.

Success in the medical profession cannot be based upon financial results alone; much depends upon tact as well as ability and personality of the individual, but we can and do wear our crown. The infer-

ence must not be drawn from these statements that every woman in the medical profession has been, can or will be a success. "A survival of the fittest" is as true in this profession as in any other, and we have our portion of failures, as do our brothers, and from the same causes.

It is not a flowery pathway to bread and butter, but a thorny one, a way that must be trod with dignity and silence. But the trail has been blazed into the plain of success, and we have pitched our tents to stay.

THE DIAGNOSIS AND TREATMENT OF AMEBIC ULCERATION OF THE LARGE INTESTINE.*

A. B. COOKE, M.D., NASHVILLE

I HAVE chosen the designation "Amebic Ulceration of the Large Intestine" instead of the customary "Amebic Dysentery" in order to emphasize several points which seem to me of vital importance to a profitable study of the subject:

First.—The essential feature of the disease process is always ulceration. Inflammation of the mucosa more or less general, loose stools, mucous and bloody discharges, etc., are usually present, but they are properly to be regarded as incidental or secondary and in no sense distinctive.

Second.—The characteristic lesions of the disease are always found in the large bowel. The consensus of opinion is that the primary site of invasion is the cecum whence the infection is carried by natural forces throughout the colon and rectum. Involvement of the distal portion of ileum is occasionally mentioned in autopsy reports, but clinically this possibility may be, and usually is, ignored.

Third.—In the majority of cases there are no constitutional symptoms except such as may properly be considered secondary to derangement of the bowel function. Impairment of the general health is a sequel, not an inherent part of the pathological process.

The disease is therefore to be regarded as a local, not a general, systemic disease, and may be tersely defined as a chronic ulcerative affection of the large bowel due to the local action of the amebæ coli (*entameba histolytica*—Schaudinn).

It is more than unfortunate that the term "dysentery" should ever have been applied to this affection, for the reason that it so often leads to confusion and error with respect to the therapeutic management. In the traditional teachings as to the treatment of dysentery, whether acute or chronic, medication by the mouth was uniformly stressed as all-important and all-sufficient; and in spite of our present day enlightenment upon the subject, the profession seems strangely reluctant to abandon the old fallacy. The very name "dysentery" still, with lamentable frequency, suggests a therapeutic routine which begins with calomel and the salines, includes opiates, astringents and intestinal antiseptics, and ends with bismuth and ipecac. Often there is no other symptom than bloody discharges from the bowel upon which to base the diagnosis, and sometimes, sad to relate, there is only the statement of the patient that he has "bloody flux." Happily the modern teaching upon this point is clear and emphatic. It is now well understood that the pas-

*Read before the Middle Tennessee Medical Society, Springfield, November 19, 20, 1909; published in part in *A. M. Journal* February 19, 1910.

sage of blood from the rectum may be due to a wide variety of causes in no way related to dysentery, and the necessity of a careful local examination in every case is coming to be recognized as a sacred obligation.

It would be interesting, did time permit, to discuss the various views advanced by pathologists as to the real etiologic factor in these cases. By some the primary causative relation of the amebæ is vigorously disputed, the contention being that a sound normal mucosa is proof against invasion by the organism. This view is very probably correct, at least as regards the initial infection. But in the light of pathologic findings it cannot be gainsaid that the nature and chronicity as well as the gravity of the affection are determined by the protozoa.

Diagnosis.—The symptoms of amebic ulceration of the large bowel do not differ from those due to ulceration from other causes. Loose stools, discharges of mucus, pus and blood, tenesmus, abdominal distension, loss of appetite, strength and flesh, progressive anemia, etc., are the phenomena common to all forms of ulceration of the large intestine, but characteristic of none. It remains then in every case to institute a thorough local examination both to determine the site and extent of the trouble and to differentiate its exact nature. As heretofore observed, the rectum and sigmoid are practically always involved, and with the use of the perfectly simple modern methods of examination, the direct inspection of these parts presents no difficulties. If the lesions be of the amebic type, their appearance is so characteristic as to render them easy of recognition by any one who has ever before examined a case. The ulcers are variable in size, number and location, irregular in shape but showing a tendency to extend in the direction of the circular muscular fibres, and covered with

white or dirty gray pellicles, the removal of which usually leaves bleeding surfaces. Except in old, neglected cases, the lesions do not extend deeper than the submucosa, but present undermined edges and not infrequently are connected by submucous tracts. The free margins and proximal surface of the rectal valves seem to be favorite sites of invasion.

But, while the clinical picture is often—I may say generally—sufficient for a diagnosis, it is strongly advisable that the confirmatory evidence of the microscope be sought in every case. This involves no great outlay of time or trouble and requires no special laboratory training. It is only necessary that the slide be warmed to approximately body temperature and the cover glass pressed well down upon the specimen, so as to spread it thinly and uniformly. When present the amebæ with their characteristic movements are always the most conspicuous objects in the field.

In order for the microscopic examination to be of any real value in the diagnosis, it is of great importance that the specimen be properly obtained. Neither mucus nor feces are reliable for this purpose. Amebæ *may* be found in them, but their presence is more or less accidental and their absence without diagnostic significance. The only reliable method of obtaining a specimen is by curetting an ulcer under direct vision through the proctoscope, the scraping being transferred to a slide and handled exactly as though it were merely mucus. If the case be one of amebic infection the organisms will rarely fail to appear in such a specimen.

Another aid to diagnosis, but one of only corroborative value, is the leukocyte count. Leukocytosis is usually present and is closely proportionate to the degree of inflammation and the amount of tissue destruction. By this means some knowledge of the patient's power of resistance

may be gained and so, in doubtful cases, assistance in settling upon the best plan of treatment.

Treatment.—The treatment of amebic ulceration may be considered under three heads: general, local and surgical.

General Treatment.—This includes (1) rest, (2) diet, (3) hygienic and sanitary measures, and (4) medication by the mouth.

(1) Rest is always of great importance. Ordinarily, time will be saved by confining the patient strictly to bed until the disease has been gotten under control. This may require only a few days or several weeks, depending upon the severity of the case; but treatment will be far more promptly effective than if the patient continues upon his feet.

(2) Diet is also a matter of importance. For a few days it may be well to restrict it to liquids given in small or moderate quantities at frequent intervals. I am convinced, however, that serious error is often committed in this connection. These patients usually come to us weak, emaciated and semi-starved from their own efforts at dieting, and one of the urgent indications is to give them nourishment as soon and as rapidly as possible. This can generally be done even in severe cases much earlier than is customary, by devoting due care and attention to the subject. In addition to the predigested foods, peptonized milk, junket, etc., it has been my observation that in the majority of cases thoroughly browned toast, juice pressed from fresh beef, and soft-boiled eggs are well borne. Fruits, sweets and all but the simplest foods should be withheld.

(3) Hygienic and sanitary measures. Hygienic measures refer to the patient himself, and include fresh air, sunshine, cheerful surroundings, etc. In obstinate cases a change of climate may be helpful through its effect upon the general health.

Sanitary measures refer more particularly to the protection of the patient's family and community. The nurse or attendant should be given explicit instructions as to destroying all discharges from the bowel, and also as to the proper cleansing of his hands after waiting upon the patient. The infectious agent is probably in the main water-borne, and the danger of contaminating the water supply should be fully explained to all concerned.

(4) Medication by the mouth. Referring first to the so-called specific medication—holding, as I do most firmly, that this disease is purely a local affection of the large bowel, I cannot believe that ipecac or any other medicinal agent administered by the mouth will retain sufficient potency, after traversing the twenty odd feet of small intestine, to exert a destructive effect upon the amebæ when finally encountered. If this principle were correct, it would seem that the practically unanimous verdict of authorities with reference to the inefficacy of the antiseptic treatment of typhoid fever would, to say the least, be inconsistent. I am aware that the ipecac treatment is lauded by many whose opinions are entitled to all respect. But it is to be remembered that the drug alone has not been relied upon by them. On the contrary, their reports show that dietetic and hygienic measures as well as irrigations have been coincidentally employed, and from my point of view these were in reality the effective agents. I would interpose no special objection to the use of ipecac; but I would strongly urge that, in the light of our present knowledge, dependence upon it to the exclusion of other measures is both unwise and unwarranted.

Speaking generally, the exhibition of medicines by the mouth should be resorted to only in presence of well-defined indications. The routine administration of any remedy is to be condemned. In

the beginning and from time to time during the progress of the case benefit may be expected from a mild mercurial purge. Occasionally an opiate will be required, though extreme caution should be exercised on this point. Intestinal antiseptics sometimes seem to be of benefit, acting by inhibiting fermentation and preventing toxemia, rather than by any special germicidal effect upon the offending organisms. Among the more reliable agents of this class salicylate of bismuth, beta-naphthol, thymol, resorcin and salol may be mentioned. The first named, in my experience, has proved the most dependable.

Local Treatment.—Whatever difference of opinion may exist as to the efficacy of ipecac, there is a striking and complete unanimity with reference to the value of local treatment. There is, however, some disagreement as to the best methods and measures to employ. Basing what follows upon personal experience, let us consider the local treatment under two heads: (1) Topical applications and (2) irrigations.

(1) Topical Applications. Undoubtedly in the average case the greatest single factor contributing to the patient's discomfort is the tenesmus. This it is which in spite of the pain forces him to seek the commode at short intervals, only to obtain momentary relief by passing a small quantity of blood-stained mucus and pus. The result is that sleep is disturbed, food is refused because it excites peristalsis, and strength is rapidly exhausted. This state of affairs is as unnecessary as it is deplorable. Tenesmus is a rectal symptom, due in this disease to the ulceration and inflammation practically always to be found in this organ. Now when we reflect that the rectum throughout is as accessible to sight and treatment as the pharynx—or, indeed, as any corresponding area upon the surface of the body—the

term "unnecessary," as applied to this symptom and its sequels, is justified. Topical applications to the diseased parts act like magic. The proctoscope is carefully introduced, the mucosa gently cleansed, and each ulcer touched with a solution of silver nitrate, 60 to 120 grains to the ounce. Before withdrawing the instrument, a general application of the same, 3 to 5 grains to the ounce, may be made by means of the atomizer. The treatment should be repeated daily until the symptom is under control; thereafter according to indications. The ulcers heal with remarkable rapidity, and the further management of the case is greatly simplified.

(2) With the large majority of clinicians irrigations constitute the main dependence of treatment. A wide diversity of opinion exists as to the most effective solution—one man advocating one kind; another, another. Personally, I believe that the effectiveness of irrigations depends rather upon the mechanical cleansing action of the solution than upon any medicinal agent it may contain. And I believe also that failure to cure every case by this method of treatment is due alone to inability to reach all infected portions of the bowel with the solution.

The intolerance of the rectum due to the local inflammation and tenesmus renders it impossible in many cases, even with the aid of posture, to force the fluid into the higher portions of the gut. The only means by which this difficulty can be overcome is the introduction of the colon tube. In spite of emphatic claims to the contrary, this is a most difficult feat as ordinarily attempted, the tube curling upon itself in the rectum, thus leading to a misapprehension as to the height it has reached. By placing the patient in the knee-chest, or inverted, posture and passing the six-inch proctoscope, the manipu-

lation is rendered both easy and accurate, the tube being introduced through the proctoscope well into the sigmoid and the latter then withdrawn. At first the irrigations should be used daily, or twice a day, not less than a half gallon of the solution being carried into the bowel before any portion of it is allowed to return. Later, as the patient improves, every other day or twice a week will be often enough, but the treatment should not be entirely discontinued for some weeks at least after the cure seems complete.

The medicinal agents employed in the solutions include boric acid, quinine, ichthyol, common salt, hydrastic, formalin, etc. Cold water alone has some advocates. My preference is the formalin in boric acid solution, beginning with one drachm to the half gallon and increasing the strength as tolerance is acquired.

In the *Journal of the A. M. A.*, for June, 1909, G. S. Hanes calls attention to the wonderful curative effect of ordinary coal oil used for irrigation, claiming that it is healing to the inflamed mucosa, destructive to the amebæ and absolutely non-toxic in any amount.

In some cases it is not impossible to completely irrigate the colon with no other tube than the ordinary two-inch syringe nozzle, *provided* the rectum is first given careful attention and the proper posture of the patient is secured.

Surgical Treatment.—Resort to surgery in the management of this disease is warranted for one purpose only—namely, to provide a means for irrigating the entire large intestine when for any reason this is impossible per rectum and the infection is proved to exist at a higher level than can be reached from below. Obviously, then, it will be indicated in only a limited number of cases.

The operation of choice is appendicostomy, in which the appendix is utilized as a conduit for the irrigating solution.

The technic of the operation is exceedingly simple, it can be very quickly performed and is practically free from danger.

When by reason of anatomic abnormality or pathologic change the appendix is found to be unsuited for the purpose intended, resort may be had to cecostomy, which, though not so simple in technic, is neither difficult nor dangerous, and answers every purpose.

The solutions for irrigating are the same as those mentioned for use per rectum. It is worthy of remark, however, that benefit apparently follows the use of plain water as promptly as the medicated solutions, seeming to prove that the effect depends rather upon the mechanical action of the fluid than upon its anti-septic action.

If I were asked to specify the indications for appendicostomy, I should name just two: (1) Failure to relieve by non-surgical methods faithfully and intelligently carried out; (2) recurrence of the attacks at such frequent intervals as to demonstrate that certain foci of infection exist in higher portions of the gut than can be reached by irrigations per rectum. But I should add an earnest plea that the operation be not reserved for moribund patients. Performed under proper conditions and by competent operators, it should give no larger mortality than the interval operation for appendicitis, which at the present time is practically nil. On the other hand, the disease itself is by no means free from danger to life, the single complication of amebic abscess of the liver and other organs causing a far higher mortality rate than that of appendicostomy.

Is appendicostomy a curative procedure? Obviously not *per se*. But that it offers a means—in certain cases the only available means—of cure is the positive verdict of many competent and credible

observers. Of course the irrigations should be kept up for a sufficient length of time to effect a cure—not less than six months, or better, twelve—and of course a cure following the operation does not preclude the possibility of a reinfection; peritonitis is also met with, though not so often as might be expected when the ulcerative character of the disease is considered.

Another complication—or, more correctly speaking, sequella—is the distortion of the intestine from vicious cicatrization. This may take the form of one or more strictures at different sites, or extensive areas may be involved, resulting in partial or complete obstruction. The after effects of the disease may thus easily prove more dangerous to life than the disease itself.

At the meeting of the Tennessee State Medical Association, in Nashville, last April, Dr. J. P. Bates read a paper condemning appendicostomy as a dangerous procedure, and citing a series of twelve operations performed in the Ancon Hospital, Canal Zone, with a mortality of 50 per cent.* He admits, however, that in every case the operation was reserved for a last resort and that all patients submitted to it were in extreme condition at the time, several of them, in fact, being practically moribund.

In the light of these admissions it is only surprising that the other 50 per cent also did not succumb. That appendicostomy is not a dangerous operation when performed by competent operators in properly selected cases is clearly apparent from the 180 odd cases of which I have collected data from personal correspondence. Of this number, in the hands of six or more different surgeons, only one fatality occurred, gangrene of the cecum in a

greatly weakened patient being the cause assigned in this case. This is a mortality of .6 per cent—a rate far less than occurs either from the natural course of the disease or from any one of its several complications.

In conclusion, I would call attention to the great and growing frequency of amebic infection in all portions of our country. Whether the increase is due to a more widespread distribution of the protozoa or to a more careful and intelligent study of suspicious cases it would not be possible to say definitely.

The disease is always to be regarded a serious one and the patient should in the beginning be impressed that the result (his safety) will depend in large measure upon his coöperation in the treatment. Strange to say, a certain very small percentage of cases seem to run a self-limited course, recovering permanently after one or several attacks without treatment. On the other hand (generally speaking, the earlier the treatment is begun the more favorable the prognosis), some cases prove obstinately intractable from the outset, and a fatal termination from toxemia, exhaustion or some complication follows in a few weeks. This type of the disease is, however, rarely seen outside of tropical countries.

Generally speaking, the prognosis may be said to be favorable. This is especially true when the treatment is begun early and faithfully carried out by the physician himself.

By far the most frequent complication is abscess of the liver. Statistics differ very greatly on this point, but it is probably not far from correct to say that this complication occurs in 5 per cent of all cases, and in more than 50 per cent of all fatal cases. It is only necessary to remember that the return circulation from the intestine is through the portal vein

*JOURNAL TENNESSEE STATE MEDICAL ASSOCIATION, June, 1909.

to understand this danger. Amebic abscess of the brain, lung and other organs are also occasionally encountered.

Perforation of the gut wall leading to fatal peritonitis is also met with, though not so often as might be expected when the ulcerative character of the disease is considered.

Another complication—or, more correctly speaking, sequella—is the distortion of the intestine from vicious cicatrization. This may take the form of one or more strictures at different sites, or extensive areas may be involved resulting in partial or complete obstruction. The after effects of the disease may thus easily prove more dangerous to life than the disease itself.

It is quite probable that both causes are responsible. I am confident, when I

recall my own earlier experience, that I formerly saw a number of cases, the true nature of which I failed to recognize, and one of which at least resulted fatally.

In the past five years I have seen and verified the diagnosis in more than thirty cases, most of which occurred in patients residing in Tennessee. This personal experience together with what I have heard of the experience of others, leads me to conclude that the trouble is far more prevalent in this section than is generally supposed. As before stated, the diagnosis in these cases is easily made. The one thing needful to prevent suffering and save life is to realize the local nature of the disease and institute the proper examination in every suspected case. Far better, many needless examinations than that the truth should be missed in a single infected case.

INTUSSUSCEPTION IN CHILDREN.*

JOHN OVERTON, M. D., NASHVILLE.

INTUSSUSCEPTION is the condition in which there is invagination of some portion of the intestines into a portion immediately continuous. In the usual single form we have three cylindrical tubes. The outer is called the intussusciens, or sheath, the inner two are spoken of together as the intussusceptum, and separately as the middle or returning tube and inner or entering tube. Where the sheath becomes continuous with the middle tube is the neck, and where the inner and middle tubes become continuous is the apex or head. The direction of the invagination may be toward pylorus or anus—*i. e.*, ascending or descending.

It is usually divided into two classes variously designated by different men;

one class produces no symptoms and is spoken of as physiologic, or agonic, as it is supposed to occur at the time of the death agony, the other produces symptoms and is known as inflammatory, obstructive, or pathologic.

On autopsies, especially in children, the first form is found in 8 per cent of cases, according to Holt. They are generally multiple, ascending, affect small intestines solely, as a rule, and are easily reducible. The pathologic form is practically always single as well as descending, involves in a great majority of cases the small and large intestines and is frequently very difficult to reduce. Occasionally there are found partial invaginations as well as compound forms. Rarely the appendix or Meckel's diverticulum is the starting point of an intussusception;

* Read before Nashville Academy Medicine, 1909.

the ileum, colon, and ileo-colic portions are generally affected, though very rarely the duodenum or rectum may be affected.

Intussusception is said by Treves to be the cause of acute obstruction in three-eighths of all such cases and in children it is the cause in three-fourths.

The anatomic conditions which favor its development in children are a long mesentery and movable colon, as well as a rapidly progressing disproportion between the colon and ileum, especially in the first few months of life. Diarrhea, constipation, or any other condition that may cause disturbance in the normal functional activity of the intestines may occasionally act as predisposing causes, though they do not appear to have much significance. In children we rarely have such conditions as polyp, ulcer, etc., which often are present in the adult. The great percentage are of the ileo-cecal variety. There has been a great deal of study and experimentation carried on, in an effort to determine exactly its mechanism. The principal views held are, first, that it is due to a spasmodic contraction of some portion of bowel without any change in the part into which it is invaginated. The second is, that besides this spasm at one point there must be a paralysis of the segment which forms the intussusciens. The third, held by Besmer, is, that it is purely mechanical, and that neither spasm nor paralysis is essential. Following upon careful investigation and experimentation upon rabbits, Nothnagel has come to the conclusion that small physiologic invaginations may often be produced in man and cause no symptoms. He thinks also that the pathologic form is simply a difference in degree and not in kind. He has repeatedly experimented upon rabbits, produced invagination and carefully observed its formation as well as its reduction. By ap-

plying a faradic current to a portion of bowel he produced a tetanic constriction, then the longitudinal fibres of the part below appeared to draw this portion up over the constricted part.

The invagination was increased for most part by action of these longitudinal fibres and always at the expense of the sheath or intussusciens. It may be that the head acts as an irritant and brings on strong peristaltic action of portion above and so helps to increase the invagination. Upon examination of condition as found in man this theory seems to be borne out, since it has been observed that the entering portion always remains the apex and that the invagination is always increased at the expense of the receiving portion. Though Nothnagel doesn't deny the possibility of a paralytic condition favoring the formation of an intussusception, he was not able to produce it experimentally.

When an intussusception is formed there must necessarily be some traction on and compression of mesentery of the intussusceptum and it is the changes which follow that constitute the pathology and as result of which symptoms develop.

When the invagination is short and the mesentery is not compressed there are no changes and no symptoms. But when compression is decided there follows hyperemia from obstruction to the venous circulation, and this is succeeded by exudation and hemorrhage into parenchyma and lumen. If obstruction is complete then gangrene will follow. The apex, convexity and middle or returing tube are most affected. As might be expected, there is a curving of the mass with concavity toward the mesentery. This may go so far as to produce kinking and obstruction, or the axes of the two portions may be changed so that obstruction is

produced in this way. The oedema and swelling may subside and partial function be restored or rarely spontaneous reduction may take place.

Within a few days there is generally a localized peritonitis especially at neck and on serous surfaces of middle and inner tubes. Adhesions are not usually firm until fourth day, but when firm prevent reduction. Adhesions at the neck act as a protection against perforation when sloughing of intussusceptum occurs. If this union is not firm perforation may occur and general peritonitis follow, abscesses may form, or septic thrombophlebitis may develop in the mesenteric veins. Occasionally there is rupture of the mass and generally peritonitis following.

Gangrene and sloughing usually occur early, within two or three weeks, and at neck, if late, is usually at apex.

In the chronic form there often is a stiffening and thickening of the bowel above obstruction with occasional ulceration. After sloughing the healing of a circular ulcer may result in stricture. According to D'Arcy Power the submucous tissue and circular muscular fibres are most affected. The condition may terminate in sclerosis, the cellular elements in wall may undergo tryptic digestion and transformation into reticulin, or diffuse suppuration, a sloughing may follow.

Three-fourths of the cases of intussusception occur before second year and one-half between fourth to ninth months. According to Holt, in only about 3 per cent is there any history of recent intestinal derangement. In the great majority of cases the accident occurs in a healthy child and is sudden in onset. It may occur when the child is perfectly quiet and even when asleep. Child is seized by an acute colicky pain which

may be so severe as to throw it into convulsions, vomiting occurs fairly regularly in children, symptoms of shock and collapse generally rapidly succeed cold, moist skin, rapid, weak pulse and normal or subnormal temperature, eyes become sunken, child is restless and the expression is one of great suffering.

Soon after onset there may be several fecal movements. Soon the action becomes only mucus and blood; blood said to be absent in 20 per cent of cases. The sphincter may become relaxed and this material constantly come away. At first abdomen is generally flat or retracted and no rigidity present. There may develop some points of tenderness especially about the umbilicus and in 85 per cent of cases a tumor can be made out by abdomen and often by rectum. This tumor may be situated anywhere, but probably is most often in sigmoid region. It is slightly curved, cylindric, and is usually slightly compressible. Often it will be quite hard, especially when contraction is taking place, and will suddenly become soft. It can often be felt in rectum and sometimes protrudes from anus. In a few days distension may develop especially when peritonitis begins.

The pain is generally colicky and intermittent, but may be continuous. Later it may be due to peritonitis.

At first vomiting consists of stomach contents, then bile, and occasionally, especially when obstruction is high up, of feculent material. Wallace, in *A. M. A.*, says it often contains blood. Tenesmus may be marked, and the more as tumor approaches rectum. In the acute cases even after a few hours the child offers a most pitiful picture. Fortunately they will, after a while, become stuporous and appear then not to suffer so much.

In the chronic cases the symptoms are milder and blood occurs only in about

45-50 per cent of cases. However, wasting is rapid and steady.

Complete recovery may take place following injection of air or water or may occur spontaneously.

Restoration of function and relief of symptoms may follow sloughing of invaginated portion. Untreated 80 to 90 per cent die—a few the first twenty-four hours, most from three to seven days. The most favorable cases are the subacute ones in children over ten years of age.

In the chronic form due to exhaustion, death from gangrene and sloughing rarely occurs in the very young, because they die before it takes place. Out of 362 cases collected by Holt 24, or 6 per cent, had sloughing, but of these only two were infants.

As a rule diagnosis is easy if condition is thought of, and it should always be considered when symptoms of obstruction develop, but occasionally it is difficult. If a previously healthy child, especially from four months to two years of age is suddenly seized with acute severe abdominal pain, vomiting, symptoms of shock, occlusion of bowels and passage of a bloody mucus, intussusception should be strongly suspected and carefully examined for. When a tumor can be felt the diagnosis is practically positive. When condition is suspected, unless the abdomen is soft and relaxed, patient should be anesthetized and mass felt for.

We should, of course, endeavor to eliminate other conditions, especially strangulated hernia.

When occlusion is not complete it may be very difficult to differentiate from dysentery and in a few cases the symptoms may be so mild and obscure as not to warrant the diagnosis until too late.

Old statistics give the mortality in acute cases under one year from 60 to

80 per cent, ten years 50 to 70 per cent and chronic almost always fatal. Recent are more favorable. In cases operated on early where reduction was easy, mortality has been reduced to 30 to 35 per cent, but when impossible is still high, 80 to 90 per cent.

The younger the child and the longer we wait the more unfavorable the prognosis. Up to 1882, all cases in the St. Bartholomew Hospital were treated in the medical ward. If case is gotten early and condition is not bad we may try reduction by injection either of air or water. Though cases have been cured by this method we cannot always be sure it has been successful. If the symptoms do not subside in a few hours, abdomen should be opened, incision made in middle line, no matter where tumor is felt.

Every precaution should be used to prevent and to lessen shock. Best results are gotten after manual reduction. This should be done if possible without running too much risk of doing damage. Taxis may tear the peritoneal coat and traction may tear entering tube or mesentery. Compression with gentle manipulation should be given a fair trial. If this cannot be done anastomosis of portions above and below may be done, or resection, or artificial anus, insertion of tube, neck incised, or excision of intussusceptum. In the very young and the very bad cases do whatever can be done quickest. A strong, well-fitting binder should be applied and child closely watched, because if it does well it will soon toss about, sit up and walk around holding to railing of bed. Give water and milk by mouth if it will take it, especially if breast fed. If advisable, regularly give rectal irrigation and other forms of stimulation.

I have had the opportunity of seeing four children in whom this condition was

diagnosed and of seeing them operated on. All four appeared to be quite clear, well-defined cases. They were all very sick at time of operation. Their ages were, respectively, five months, seven months, nine months and thirteen months. In all but the third case of nine months of age the condition was found on operation. In this case the surgeon claimed to have found a hernia through the foramen of Winslow into lesser cavity. In the other two the intussusception was very marked but both were comparatively easily reduced. All these cases died, I think, within twenty-four hours after operation. In the fourth case, thirteen months, the intussusception was of the ileo-cecal variety, as were the others, and probably involved two feet

of bowel and was very difficult to reduce. On attempting taxis the peritoneal coat was split at one place, however, it was finally accomplished by manipulation and no serious damage done. Around the intussusceptum at the neck the bowel appeared to be occluded and its peritoneal coat was rubbed off all the way round for extent of three-fourths of an inch along gut, otherwise it looked healthy, so it was decided to do nothing further. Abdomen was closed by through and through silk work gut sutures, and child recovered promptly—next day could hardly be kept in bed. These cases illustrate how important it is to act early and of how very serious a nature the condition is even then, especially when the child is below one year of age.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

PRELIMINARY PROGRAMME.

THE responses thus far received from the call for papers for the coming meeting gives assurance of a most interesting and instructive gathering. Below we give the titles of papers and names of those who will present them, from which it can be seen that the class is high, the topics live, and subjects of wide range.

It is hoped that the meeting will prove a most beneficial one to the entire profession, and to this end it is urged that every component County Society will be represented by a full delegation. From a glance at the preliminary programme, it will be seen that the responses thus far received are largely from the larger towns and cities. This should not be, but rather the programme should be made up of papers more widely distributed, thus showing a more general interest in the meeting and the work of the Association.

Many of our larger towns are as yet unrepresented, and we desire to urge these members of the profession to at once take notice of this fact and send titles of papers to the Secretary now, so that they may be placed upon the permanent programme, which will be compiled as soon as possible, so as to be ready for the meeting.

Special notice is herewith given that each one presenting a paper shall prepare and transmit to the Secretary an abstract of his paper; this abstract to be a short, concise outline of his paper, giving its special features. This should be in type-writing and about 150 to 200 words. Another most important feature of the programme, as yet, of the names of many who open the discussion of the paper to be presented.

Let us have more papers with all conditions met as to abstract and party to open the discussion.

We note the absence from the programme, as yet, the names of many who have contributed much to the interest and information of the members. Now is your time. Send in your title, abstract and name of one to open discussion. Do not wait and then regret it.

The special order for the evening session of the first day will be the Address of President Jere L. Crook, M.D., which will be a message of much importance and interest to the profession and public at large.

Immediately following this address the Association will have the pleasure of hearing a most complete, interesting and

instructive discussion of the hookworm disease as at present known and understood. This will be especially important, and in order to place before our Association the latest word from the leading spirits in this field of work, we will be favored by having with us men of national reputation to present this subject, from without the State, as well as those of this Association who are doing much in the research work in our own State.

PRELIMINARY PROGRAMME, MEMPHIS
MEETING, APRIL 12, 13, 14.

President's Address—J. L. Crook, M.D., Jackson.

Special order for evening session, first day:

- (1) Symposium on Hookworm Diseases—
 - (a) Dr. Chas. W. Stiles, U. S. Marine Hospital Service, "Discovery, Distribution, Consequences" (illustrated).
 - (b) Dr. George Dock, New Orleans, La., "Symptomatology and Diagnosis."
 - (c) Dr. H. F. Harris, Atlanta, Ga., "Treatment."
 - (d) Dr. Louis Leroy, Memphis, Tenn., "Clinical Manifestations."
 - (e) Dr. G. Newton Evans, Nashville, Tenn., "Pathology," and report of work along this line.
 - (f) Hookworm Dissection, with Reference to the Non-Oviparius Female—Wm. Litterer, M.D., Nashville.

This especially interesting discussion will be a feature of the meeting and an evening will be devoted to it.

- (2) Pellagra—with report of a remarkable case—J. A. Sewell, M.D., Rockwood.
- (3) Chronic Prostatitis—Geo. R. Livermore, M.D., Memphis.
- (4) The Clinical Significance of Silent Fluids in the Thoracic Cavity—Frank A. Jones, M.D., Memphis.

- (5) Salpingitis—Its Treatment—J. Hugh Carter, M.D., Memphis.
- (6) Manic-Depressive Insanity—J. W. Stevens, M.D., Nashville.
- (7) Symptoms and Effects of Adenoids—W. L. Simpson, M.D., Memphis.
- (8) The Treatment of Hyperthyroidism (Exophthalmic Goiter)—W. D. Haggard, M.D., Nashville.
- (9) Surgical Aspect of Epilepsy, with Report of Cases—G. G. Buford, M.D., Memphis.
- (10) Foreign Bodies in the Eye—Robert Fagin, M.D., Memphis.
- (11) Treatment of Acute Ailments Occurring in Persons Addicted to the Habitual Use of Narcotic Drugs—Geo. E. Petty, M.D., Memphis.
- (12) The Treatment of Abortion—E. D. Watkins, M.D., Memphis.
- (13) Surgery in the Rural Districts, with Report of Case of Pyosalpinx—W. B. Eason, M.D., Bells.
- (14) Trifacial Neuralgia—W. T. Swink, M.D., Milan.
- (15) Broncho Pneumonia—T. H. Wood, M.D., Shelbyville.
- (16) Eighteen Adinomata Complicating a Case of Amebiasis—J. L. Jelks, M.D., Memphis.
- (17) Home Treatment of Tuberculosis—Dora Lee Wilder, M.D., Knoxville.
- (18) Dysentery—E. W. Mabry, M.D., Meagsville.
- (19) Sprained Ankle—Duncan Eve, Jr., M.D., Nashville.
- (20) Transduodenal Choledocotomy for Removal of Stones from the Diverticulum and Distal Extremity of the Common Duct—F. D. Smythe, M.D., Memphis.
- (21) Do Maternal Impressions Affect the Child—H. E. Christenberg, M.D., Knoxville.
- (22) Treatment of Acute Otitis Media—G. C. Savage, M.D., Nashville.

- (23) Enlargements of the Prostate—L. E. Burch, M.D., Nashville.
- (24) Regulation of the Social Evil—W. Frank Glenn, M.D., Nashville.
- (25) Paper—M. C. McGannon, M.D., Nashville.
- (26) Paper—S. S. Crockett, M.D., Nashville.
- (27) Pneumonia—D. A. Walker, M.D., Trenton.
- (28) A Century's Progress in the Study of Psychology and the Nervous System—Hazle Padgett, M.D., Nashville.
- (29) The Surgical Aspect of Stone in the Kidney—J. A. Crisler, M.D., Memphis.
- (30) Malingering—E. A. Davis, M.D., Earlinton, Ky.
- (31) A Leaf from the Catechism of Pediatrics—Herman Hawkins, M.D., Jackson.
- (32) Placenta Previa—A. T. Clopton, M.D., Milan.
- (33) Ophthalmia Neonatorum—J. L. Minor, M.D., Memphis.
- (34) The Present Status of Electrotherapeutics—M. B. Farrar, M.D., Nashville.
- (35) Report of Two Cases of Dacryocystitis with Associate Corneal Ulcers—R. B. Nelson, M.D., Jackson.
- (36) Tuberculin Treatment in Pulmonary Tuberculosis—Wm. Litterer, M.D., Nashville.
- (37) A Unique Case of Hysterectomy—W. D. Ray, M.D., Memphis.
- (38) The Effects of Soamin on the Eye—E. C. Ellett, Memphis.
- (39) Is Medicine an Exact Science?—B. F. Turner, M.D., Memphis.
- (40) Subphrenic Abscess; Report of a Case in which Reputure into a Bronchus Occurred—A. B. Cooke, M.D., Nashville.
- (41) A Plea for a Higher Standard of Medical Education—Ambrose McCoy, M.D., Jackson.
- (42) Failure to Report Communicable Diseases a Criminal Disregard of Law—N. F. Raines, M.D., Memphis.
- (43) Excision of Scapula; Excision of the Knee; Excision of the Head of the Humerus—M. Goltman, M.D., Memphis.

SPECIAL RATES.

WE gave notice in the last issue of THE JOURNAL of the arrangements made for special rates to the Memphis meeting, April 12, 13, 14, 1910. In order that all the conditions upon which these "special rates" are granted may be known and fully understood, we herewith give specific information and instructions, which should be borne in mind when you go to purchase your ticket:

"All delegates or members holding standard form certificate-receipts secured from and executed by agents at starting points evidencing payment of tariff rate

to place of meeting, will be sold tickets for return trip under following rules:

"Fare and one-third, plus 25 cents, for the round trip from all stations in Tennessee located on the lines of the Illinois Central Railroad, Louisville & Nashville Railroad, Nashville, Chattanooga & St. Louis Railway and that portion of the Tennessee Central west of Nashville.

"Fare and one-half, plus 50 cents, for the round trip from all stations in Tennessee located on the lines of the Cincinnati, New Orleans & Texas Pacific Railway; Mobile & Ohio Railroad, Virginia &

Southwestern Railway, Southern Railway, and that portion of the Tennessee Central east of Nashville.

"(When routing is via a steamship line the steamship arbitrary will be added.)

"Going Trip.—It is necessary that such persons procure certificate-receipts from agents when going tickets are purchased. If through tickets to place of meeting cannot be procured at starting stations, persons should purchase to most convenient stations at which such through tickets can be obtained and there re-purchase through to place of meeting, procuring certificate-receipt from each agent from whom a ticket is purchased, and presenting all certificate-receipts to Special Agent at place of meeting. No refund of fare will be made because of failure to procure certificate-receipts.

"Return Trip (a) Validation for Return.—Certificate-receipts will not be honored for return tickets unless signed with ink by authorized officer of our meeting and by Special Agent appointed by carriers, who will sign certificate-receipts only when satisfied that one hundred (100) or more delegates or members holding properly executed certificate-receipts have attended meeting. You therefore see how important it is to procure certificate-receipts when purchasing going tickets.

"Time Limits.—No certificate-receipts procured more than three (3) days (not counting Sundays) prior to or more than two (2) days after date fixed for the commencement of meeting will be honored.

"Certificate-receipt must be presented to ticket agent during time meeting is in session or within three (3) days (not count-

ing Sunday) after date fixed for adjournment of meeting.

"Not Transferable. Neither certificate-receipts nor tickets issued in exchange therefor are transferable, and if presented by any other person than original purchasers, they will not be honored, but will be forfeited.

"Tickets for return trips issued in exchange for certificate-receipts will be limited to continuous passage by first train or steamer leaving place of meeting after purchase.

"Certificate-receipts must be presented to ticket agents a sufficient time in advance of departure of trains or steamers to permit agents to properly issue tickets and check baggage. They will not be honored by conductors or pursers.

"Return tickets at reduced rates will be sold only to stations within territory described by carriers in their tariffs announcing arrangements for this meeting.

"No certificate-receipt evidencing payment of less than 75 cents for going ticket will be honored for reduced fare returning.

"No certificate-receipt issued in connection with children's half-fare ticket, mileage, clergy, charity or employe's ticket, or any other form of transportation at less than the full regular first-class fare, will be honored for reduced fare returning.

"Be sure to secure certificate-receipt from ticket agent when purchasing your ticket to place of meeting."

These instructions, if followed, will prevent you much trouble and answer many questions.

HEADQUARTERS.

HEADQUARTERS of the Association will be at the Gayoso Hotel. Here the General Sessions will be held and the House of Delegates will also be provided with a meeting place in this building.

REGISTRATION.

Arrangements will be made for registering the members in the General Assembly hall, and members are now urged to register as early as possible, for registration is a prerequisite to securing a badge, which entitles one to speak to any question or discuss any paper on the floor during the meeting. When you come to the meeting, be sure your annual dues are paid and so noted on your county report, for unless this is the case you are not entitled to registration at the meeting until this is arranged. This is important, and if attended to beforehand may save some

embarrassment, as the Secretary is required to follow the rule of registering members.

DELEGATES.

Delegates should be sure to come provided with the proper credentials from county officers. If you have been elected delegate and cannot come, do not accept, but have the honor conferred upon some one who can and will come. This is necessary, for it sometimes happens that a county has no delegate present, but a non-delegated member. The delegates are the business representatives of the county organizations and are the most important part of the entire body—having the business of the Association in their hands. Delegates must come to insure the success of the Association. Remember this and act accordingly.

JOURNAL

of the Tennessee State Medical Association

All matters pertaining to material for publication, and questions relative to County Societies, should be addressed to GEO. H. PRICE, Secretary-Editor, 146 Eighth Ave. N., Nashville, Tenn.

VOL. II.

NASHVILLE, TENN., APRIL, 1910

No. 12

SUBSCRIPTION PRICE \$2.00 PER YEAR

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION:

President.

JERE L. CROOK, M.D. Jackson.

Vice Presidents.

O. DULANEY, M.D., West Tennessee Dyersburg.

T. J. COBLE, M.D., Middle Tennessee..... Shelbyville.

C. H. DAVIS, M.D., East Tennessee..... Knoxville.

Secretary.

GEO. H. PRICE, M.D. Nashville.

Treasurer.

W. C. BILBRO, M.D. Murfreesboro.

BOARD OF TRUSTEES OF JOURNAL.

For the Three-Year Term.

W. C. BILBRO, M.D.... Chairman, *Ex-Officio* Treasurer.
Murfreesboro, Tenn.

For the Two-Year Term.

B. D. BOSWORTH, M.D. Knoxville.

For the One-Year Term.

A. T. CLOPTON, M.D. Milan
GEO. H. PRICE, M.D..... Editor, *Ex-Officio* Secretary.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION:

For 1908-1909, S. S. CROCKETT, M.D..... Nashville.

Alternate, K. S. HOWLETT Franklin.

For 1909-1910, L. A. YARBOROUGH, M.D.... Covington.

Alternate, J. D. BREWER, M.D..... Newbern

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL:

A. B. COOKE, M.D., Nashville.

COMMITTEES:

COMMITTEE OF ARRANGEMENTS.

BATTLE MALONE, M.D., *Chairman*..... Memphis.

W. F. CLARY, M.D. Memphis.

E. C. ELLETT, M.D. Memphis.

W. H. BALDWIN, M.D. Memphis.

J. H. VENN, M.D. Memphis.

COMMITTEE ON SCIENTIFIC WORK.

GEO. H. PRICE, M.D., *Chairman* Nashville.

S. R. MILLER, M.D. Knoxville.

BATTLE MALONE, M.D. Memphis.

COMMITTEE ON TUBERCULOSIS.

H. P. COILE, M.D., *Chairman* Knoxville.

W. H. WITT, M.D. Nashville.

HERMAN HAWKINS, M.D. Jackson.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

S. S. CROCKETT, M.D., *Chairman* Nashville.

W. D. HAGGARD, M.D. Nashville.

PAUL F. EVE, M.D. Nashville.

GEO. H. PRICE, M.D., *ex-officio* Nashville.

JERE L. CROOK, M.D., *ex-officio* Jackson.

COMMITTEE ON MEMOIRS.

A. F. RICHARDS, M.D., *Chairman* Sparta.

W. G. FRIERSON, M.D. Shelbyville.

J. B. WITHERINGTON, M.D. Munford.

B. D. CALDWELL, M.D. Milan.

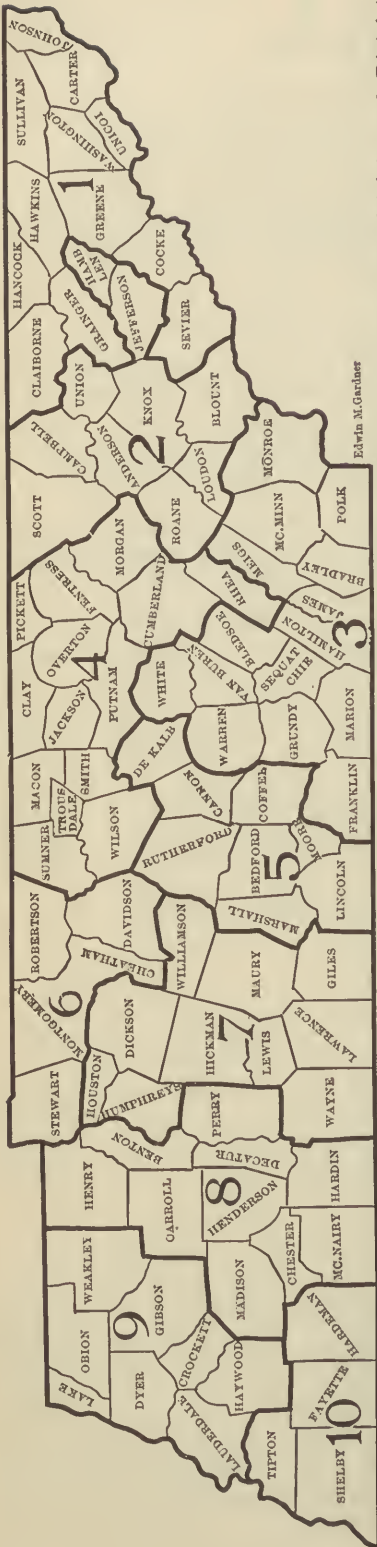
H. H. McCAMPBELL, M.D. Knoxville.

F. J. RUNYON, M.D. Clarksville.

R. W. TATE, M.D. Bolivar.

All communications concerning advertising matters should be addressed to Dr. W. C. BILBRO, Chairman, 146 Eighth Ave. N., Nashville, Tenn.

COUNCILOR DISTRICTS.



By action of the House of Delegates during the last meeting of this Association, the State was divided into Councilor Districts, each District representing a Congressional District. You will note that a heavy black line marks off each Councilor District. These Districts are numbered from right to left and from 1 to 10. Each District is under the care of a District Councilor and by referring to the list of Councilors, you will see in which District any given County is located. All questions pertaining to Organization should be referred to your District Councilor. This map is intended to be a guide and a help to all members of the Association.

COUNCILORS.

First District.

S. W. WOODYARD, M.D., 1 year.....Greeneville.

Second District.

S. R. MILLER, M.D., 2 years,
Vice Chairman, East Tennessee, Knoxville.

Third District.

GEO. R. WEST, M.D., 1 year.....Chattanooga.

Fourth District.

L. M. WOODSON, M.D., 2 years.....Gallatin.

Fifth District.

S. T. HARDISON, M.D., 1 year,
Vice Chairman, Middle Tennessee, Lewisburg.

Sixth District.

G. C. SAVAGE, M.D., 2 years, Chairman....Nashville.

Seventh District.

K. S. HOWLETT, M.D., 1 yearFranklin.

Eighth District.

E. K. MCNEIL, M.D., 2 years, Secretary.....Jackson.

Ninth District.

G. W. PENN, M.D., 1 year,
Vice Chairman, West Tennessee, Humboldt.

Tenth District.

LOUIS LEROY, M.D., 2 years.....Memphis.

JERE L. CROOK, M.D., *ex-officio*.....Jackson.

GEO. H. PRICE, M.D., *ex-officio*.....Nashville.

OFFICERS OF COUNTY MEDICAL SOCIETIES.

County Secretaries will please notify the State Secretary of errors or changes in this list.

ANDERSON COUNTY.

President, W. L. CARDEN, M.D.....Andersonville.

Secretary, JOHN CLEAH, M.D.....Clinton.

BEDFORD COUNTY.

President, J. P. TAYLOR, M.D.....Haley.

Secretary, F. B. REAGOR, M.D.....Shelbyville.

BLEDSE COUNTY.

President, J. P. BARNETT, M.D.....Pikeville.

Secretary, A. O. MEREDITH, M.D.....Pikeville.

BRADLEY COUNTY.

President, T. J. McKAMY, M.D.....Cleveland.

Secretary, C. T. SPECK, M.D.....Cleveland.

CAMPBELL COUNTY.

President, L. M. SCOTT, M.D.....Jellico.

Secretary, F. A. McCLINTOCK, M.D.....Newcomb.

CARROLL COUNTY.

President, W. M. WRIGHT, M.D.....Huntingdon.

Secretary, G. C. BRYANT, M.D.....McLemoresville.

CHESTER COUNTY.

President, JAS. R. CARROLL, M.D.....Henderson.

Secretary, I. E. PERKINS, M.D.....Henderson.

CLAIBORNE COUNTY.

President, M. B. CARR, M.D.....Tazewell.

Secretary, B. M. DAVIS, M.D.....New Tazewell.

CROCKETT COUNTY.

President, D. A. REVILLE, M.D.....Maury City.
Secretary, S. E. McDONALD, M.D.....Bells.

DAVIDSON COUNTY.

President, DUNCAN EYE, SR., M.D.....Nashville.
Secretary, H. M. TIGERT, M.D.....Nashville.

DEKALB COUNTY.

President, W. W. PARKER, M.D.....Smithville.
Secretary, W. B. PARKER, M.D.....Smithville.

DICKSON COUNTY.

President, A. H. ABERNATHY, M.D.....Dickson.
Secretary, W. S. SCOTT, M.D.....Dickson.

DYER COUNTY.

President, N. S. WALKER, M.D.....Dyersburg.
Secretary, E. L. RAWLES, M.D.....Dyersburg.

FAYETTE COUNTY.

President, W. B. BATTLE, M.D.....Galloway.
Secretary, COMPTON N. CROOK, M.D.....Rossville.

GIBSON COUNTY.

President, J. H. PRESTON, M.D.....Humboldt.
Secretary, W. C. MCREETrenton.

GILES COUNTY.

President, W. E. WILSON, M.D.....Pulaski.
Secretary, JAS. K. BLACKBURN, M.D.....Pulaski.

GREENE COUNTY.

President, I. B. BROWN, M.D.....Moshelm.
Secretary, S. W. WOODYARD, M.D.....Greeneville.

HAMBLEN COUNTY.

President, W. E. HOWELL, M.D.....Merristown.
Secretary, T. L. SMITH, M.D.....Merristown.

HAMILTON COUNTY.

President, S. I. YARNELL, M.D.....Chattanooga.
Secretary, H. P. LARIMORE, M.D.....Chattanooga.

HARDEMAN COUNTY.

President, J. D. SASSAR, M.D.....Middleton.
Secretary, ROBT. W. TATE, M.D.....Bollivar.

HAYWOOD COUNTY.

President, A. H. SORRELL, M.D.....Brownsville.
Secretary, JAS. L. EDWARDS, M.D.....Brownsville.

HENDERSON COUNTY.

President, J. H. HOWARD, M.D.....Lexington.
Secretary, C. H. JOHNSTON, M.D.....Lexington.

HENRY COUNTY.

President, E. A. TRAVIS, M.D.....Como.
Secretary, J. H. MCSWAIN, M.D.....Paris.

HICKMAN COUNTY.

President, K. I. SUTTON, M.D.....Centreville.
Secretary, JNO. S. BEASLEY, M.D.....Centreville.

HUMPHREYS COUNTY.

President, J. J. TEAS, M.D.....Waverly.
Secretary, J. T. COOLEY, M.D.....Waverly.

JACKSON COUNTY.

President, J. D. QUARLES, M.D.....Whitleyville.
Secretary, E. W. MABRY, M.D.....Meagsville.

JEFFERSON COUNTY.

President, W. F. KING, M.D.....Jefferson City.
Secretary, B. M. TITTSWORTH, M.D.....Jefferson City.

KNOX COUNTY.

President, S. D. ACUFF, M.D.....Knoxville.
Secretary, S. H. HODGE, M.D.....Knoxville.

LAKE COUNTY.

President, J. M. WRIGHT, M.D.....Tiptonville.
Secretary, J. D. ALEXANDER, M.D.....Tiptonville.

LAUDERDALE COUNTY.

President, J. R. LEWIS, M.D.....Ripley.
Secretary, W. D. MILLER, M.D.....Ripley.

LINCOLN COUNTY.

President, L. H. GILLIAM, M.D.....Kelso.
Secretary, J. M. CULLUM, M.D.....Fayetteville.

LOUDON COUNTY.

President, J. J. HARRISON, M.D.....Loudon.
Secretary, T. J. HICKMAN, M.D.....Lenoir City.

MADISON COUNTY.

President, P. B. LUSK, M.D.....Jackson.
Secretary, E. K. MCNEIL, M.D.....Jackson.

MARSHALL COUNTY.

President, J. R. RICKMAN, M.D.....Chapel Hill.
Secretary, T. E. REID, M.D.....Lewelsburg.

MAURY COUNTY.

President, C. D. NOWLIN, M.D.....Mt. Pleasant.
Secretary, M. M. COOK, M.D.....Santa Fe.

MONROE COUNTY.

President, B. W. BAGWELL, M.D.....Madisonville.
Secretary, J. E. DAVIS, M.D.....Sweetwater.

MONTGOMERY COUNTY.

President, R. B. MACON, M.D.....Clarks ville.
Secretary, J. C. MORRISON, M.D.....Clarks ville.

MORGAN COUNTY.

President, A. S. WILTSIE, M.D.....Lancing.
Secretary, G. R. TODD, M.D.....Wartburg.

OBION COUNTY.

President, P. N. MATLOCK, M.D.....Mason Hall.
Secretary, JAS. F. DARNELL, M.D.....Union City.

OVERTON COUNTY.

President, M. B. CAPPS, M.D.....Livingston.
Secretary, W. A. REED, M.D.....Livingston.

POLK COUNTY.

President, R. L. HYDER, M.D.....Isabella.
Secretary, K. E. ROGERS, M.D.....Ducktown.

PUTNAM COUNTY.

President, W. S. FARMER, M.D.....Chestnut Mound.
Secretary, L. D. J. ENSOR, M.D.....Cookeville.

RHEA COUNTY.

President, R. C. MILLER, M.D.....Evensville.
Secretary, W. B. WILLIAMS, M.D.....Rhea Springs.

ROANE COUNTY.

President, W. W. HILL, M.D.....Cardiff.
Secretary, G. C. GIVAN, M.D.....Harriman.

ROBERTSON COUNTY.

President, T. L. JOHNSON, M.D.....Greenbrier.
Secretary, B. F. FYKE, M.D.....Springfield.

RUTHERFORD COUNTY.

President, A. J. JAMISON, M.D.....Murfreesboro.
Secretary, RUFUS PITTS, M.D.....Murfreesboro.

SCOTT COUNTY.

President, THOS. L. PHILLIPS, M.D.....Newland.
 Secretary, A. A. BAIRD, M.D.....Helenwood.

SEVIER COUNTY.

President, P. E. WALKER, M.D.....Sevierville.
 Secretary, R. J. INGLE, M.D.....Sevierville.

SHELBY COUNTY.

President, G. B. THORNTON, M.D.....Memphis.
 Secretary, J. W. PRICE, M.D.....Memphis.

SMITH COUNTY.

President, J. J. BEASLEY, M.D.....Pleasant Shade.
 Secretary, J. H. CHISM, M.D.....Carthage.

SUMNER COUNTY.

President, JOHN R. PARKER, M.D.....Gallatin.
 Secretary, W. N. LACKEY, M.D.....Gallatin.

TIPTON COUNTY.

President, L. HILL, M.D.....Covington.
 Secretary, B. V. DICKSON, M.D.....Covington.

UNICOI COUNTY.

President, DR. L. S. TILSON.....Erwin.
 Secretary, DR. E. B. HARRELL.....Unicoi.

WARREN COUNTY.

President, E. L. MOONEYHAM, M.D.....Rock Island.
 Secretary, T. O. BURGER, M.D.....McMinnville.

WASHINGTON COUNTY.

President, W. T. KENNEDY, M.D.....Johnson City.
 Secretary, JOHN W. COX, M.D.....Johnson City.

WEAKLEY COUNTY.

President, H. S. COPELAND, M.D.....Palmer'sville.
 Secretary, HUGH BARR, M.D.....Dresden.

WHITE COUNTY.

President, B. S. RHEA, M.D.....Bon Air.
 Secretary, A. F. RICHARDS, M.D.....Sparta.

WILLIAMSON COUNTY.

President, H. P. COCHRAN, M.D.....Franklin.
 Secretary, K. S. HOWLETT, M.D.....Franklin.

ANNUAL REPORTS FROM COUNTY SOCIETIES.

To the Secretaries of County Medical Societies:

LET the Secretary of each County Society note the following facts: Our next annual meeting will be held in the city of Memphis, beginning on the second Tuesday of April and lasting three days—the 12th, 13th and 14th. The reports from County Secretaries showing each member, postoffice and other data, with dues for the coming year—\$2 for each member—should be in the hands of the Secretary of the Association at least thirty days prior to the meeting, in order that a general report of the condition of the Association and its affiliating County Societies may be compiled in ample time for the annual meeting. At the proper time, special instructions will be mailed to each County Secretary, with proper blanks for making County reports. Between this and that time, all information concerning members should be properly collected and arranged, so that the blanks can be filled out without trouble and returned promptly to the Secretary. Please

remember that any money for dues of members should be sent to the Treasurer of the Association, who is Dr. W. C. Bilbro, Murfreesboro, Tenn. All information concerning members who have died since the last meeting should be collected, put in proper form, as a report from the local County Society, with whatever resolutions concerning those members which have been adopted by your local County Society. This information should be collected, prepared properly, and sent to the Chairman of the Committee on Memoirs, who is Dr. A. F. Richards, Sparta, Tenn. This information should be in the hands of this Committee before the meeting of the Association; in fact, it should be sent to the Chairman or some member of the Committee thirty days before the annual meeting, so that this Committee can properly compile this report. (See Committee on Memoirs, first page in JOURNAL.) All of these matters are important and should be attended to now, so as to avoid complications at the time of the meeting.

JOURNAL

OF THE TENNESSEE STATE MEDICAL ASSOCIATION

VOL. II.

NASHVILLE, TENN., APRIL, 1910

No. 12

SOME POINTS ON THE SCIENTIFIC AND ECONOMIC SIDES OF THE MEAT QUESTION.*

BY CHAS. P. M'NABB, KNOXVILLE.

THE scientific study of the problems of nutrition has made such rapid strides in the last few years, that accurate knowledge of the amount and kinds of food required to sustain an individual of any given size and weight, when doing light or heavy work or at complete rest and the nutritive value per gram or pound of all food substances has been so carefully worked out that every housekeeper may know, to the fraction of an ounce just what and how much to buy to meet the necessities of her household for the day or week, provided she knows the number of visitors who will be guests at her table during the time for which she makes her purchases. Unfortunately, however, not only the housekeepers, but the heads of the family, and I fear too often the physicians of the family, do not take the trouble to inform themselves upon this important and far-reaching subject; hence many millions of dollars are spent annually in America for *refuse* and unedible foods, especially meats, which might as well be spent for toy balloons, so far as any profit or benefit received in return by the consumer is concerned. I therefore think it worth while to try to present a few facts to this body tonight, hoping they will

serve to awaken sufficient interest to make us, as physicians, take notice of passing events along the lines of the kind and quality and the cost of the foods, our patients and ourselves and families must have.

The chemical substances of which the human body is composed are almost identical with the elements contained in our foods, the most important of which are oxygen, hydrogen, carbon, nitrogen, calcium, phosphorus, and sulphur, so combined as to form many compounds in our bodies and many varieties in our foods. In the body, the important compounds formed from the food elements entering into its composition are proteids, fats, carbohydrates, mineral matter and water, the same elementary compounds found in our foods in sufficiency to supply the demands of heat and energy, and to repair or replace the worn-out cells of the various parts and organs, without overburdening the digestion by quantity of food required. To go minutely into the details of nutrition and metabolism would lead me too far afield and prolong this paper beyond your endurance, and as the gist of the paper is the daily requirements of proteid, fats and carbohydrates for a man of average weight at ordinary labor, I will try to indicate the amount and proportion of each kind necessary. Food values are

*Read before the Knox County Medical Society, February 3, 1910.

estimated in calories, and one calory represents the amount of heat required to raise the temperature of one kilogram of water, one degree centigrade or approximately to raise the temperature of one pint of water four degrees Fahrenheit and the daily ingestion of foods must equal sixteen to twenty calories for each pound of the person's weight, and it is absolutely necessary that the diet shall be a mixed one, containing in proper proportion, proteids, carbohydrates and fats. Of course a few days can be passed without variation of food elements, but weeks or months cannot pass without sufficient of each of the three essentials without serious consequences following.

All new growth and repair of worn-out cells and structures result from proteids, while heat and energy, force or power of every description comes from the combustion within the organism of fats and carbohydrates taken in as food. Not a cell can be replaced or a wound repaired without a sufficient supply of proteid to rebuild the lost protoplasm; but in case of necessity, proteids can be converted into heat and energy. As a homely illustration, the human body may be compared to a locomotive. Carbohydrates and fats represent coal and water, by which the power is supplied to move the train, but if a driving rod or a coupling pin breaks, no amount of steam will repair the accident, but iron or steel (proteid) must be obtained to repair it.

A man weighing 150 pounds at moderate labor or exercise requires about 3,000 calories per day to sustain his health and strength, with much less than 3,000 calories exhaustion soon follows; but 3,000 heat units does not necessarily meet the demands, for all that might be supplied from fats or carbohydrates without a gram of proteid to replace the wear and tear of organs and tissues, and unless proteid in some

form is supplied sufficient to meet such loss—i. e., about 120 grams daily—the laborer's strength soon fails and he cannot longer render good service. The tables of food proportion of Voit and Atwater, though differing slightly from each other, are doubtless very nearly correct and they serve as the standard of comparison by most authorities on dietetics. Voit's estimate is proteid, 118 grams; fat, 50 grams; carbohydrates, 500 grams. As each gram of proteid yields 4.1 calories and one gram carbohydrates, 4.1 calories, and each gram of fat 9.3 calories, the Voit daily dietary furnishes the system with 2,998 calories. Atwater's estimate is: proteid 125 grams, fat 125 grams, carbohydrates 400 grams; equaling 3,314 calories per day.

The high prices for some time prevailing on beef, mutton, pork, poultry, etc., has fixed the attention of the public on these foods, and as they are the chief source of supply of our most important food element—to wit, proteid—I shall devote the remainder of my paper to the consideration of our meat supply, noting the nutritive value of different kinds of animal and poultry, and of different parts of the same animal:

| BEEF, FRESH. | Refuse | Water | Proteid | Fat | Fuel Value, per lb. |
|------------------------|---------|---------|---------|---------|---------------------|
| | Per Ct. | Per Ct. | Per Ct. | Per Ct. | Calories. |
| Porterhouse steak..... | 12.7 | 52.4 | 19.1 | 17.9 | 1100 |
| Surloin steak..... | 12.8 | 54.0 | 16.5 | 16.1 | 975 |
| Neck Roast..... | 27.6 | 45.9 | 14.5 | 11.9 | 1165 |
| Round steak..... | 7.2 | 60.7 | 19.0 | 12.8 | 890 |
| Fore quarter..... | 18.7 | 49.1 | 14.5 | 17.5 | 995 |
| Hind quarter..... | 15.7 | 50.4 | 15.4 | 18.3 | 1045 |
| VEAL. | | | | | |
| Fore quarter..... | 24.5 | 54.2 | 15.1 | 6.0 | 535 |
| Hind quarter..... | 20.7 | 56.2 | 16.2 | 6.6 | 580 |
| MUTTON. | | | | | |
| Fore quarter..... | 21.2 | 41.6 | 12.3 | 24.5 | 1235 |
| Hind quarter..... | 17.2 | 45.4 | 13.8 | 23.2 | 1210 |
| LAMB. | | | | | |
| Hind leg..... | 17.4 | 52.9 | 15.9 | 13.6 | 860 |

Grown Chickens.—Refuse, 25.9; water, 47.1; proteid, 13.7; fat, 12.3; calories (per pound), 765.

Broiler Chickens.—Refuse, 41.6; water, 43.7; proteid, 12.8; fat, 1.4; calories (per pound), 305.

I have introduced these tables to show that the less expensive cuts of meat contain as much or more nutriment than the expensive cuts, and if they are properly cut and well and nicely cooked, they are fully as palatable. The fashion of cutting meats across the fibres to the bone and then sawing the bone, is no doubt economical from the dealer's standpoint, but it increases the per centage of "*refuse*" and sacrifices some nutrition and considerable palatability and also smears over the cut surface with bone particles from the saw teeth, as any one can easily see by looking at it with a magnifying glass, and in the same way the nutritive juices are seen oozing from the cut surface. I learned a few years ago while traveling in Mexico that steaks cut lengthwise, the muscle did not lose the flavor imparted to it by creatin. Meat cut that way would naturally cost more per pound, but would be cheaper in the end. I would also call attention to the lack of nutritive value in veal, lamb, and young fowls, and the ultimate economic loss to the farmer in selling his young animals when they are but

a few weeks old. The meat of every young animal is also harder to digest than after maturity, especially is this true of veal, which contains too much gelatin and but little of the aromatic constituent creatin. I am aware that I am trampling under foot a cherished tradition in the foregoing assertion, but I have stated a demonstrated truth and I predict that in ten years it will be unlawful to sell or offer to sell the meat of calves, lambs and broiler chickens. Who would deny that fruits, vegetables and cereals are more healthful and more nutritious after maturity? Why are not the flesh of animals the same?

There is a small per cent of proteid in the cereals usually eaten by human beings and the *pulses* all contain legumin, a vegetable proteid in considerable proportion—to wit, beans, peas and peanuts 20%—but it is so combined with starchy elements in the legumes that it is hard to digest and assimilate it, and it takes about 4 ounces of proteid as a daily allowance, and as the pulses contain only about 20%, one would have to eat about 20 ounces per day of beans or peas to get enough legumine to meet his proteid requirement.

MULTIPLE SCLEROSIS, WITH REPORT OF CASE.

BY S. T. RUCKER, M.D., MEMPHIS.

ETIOLOGY AND PATHOLOGY.—Multiple sclerosis is now regarded as a peculiar form of chronic myelitis with typical histologic changes. It usually implicates the entire spinal cord as far as the medular oblongata; isolated foci are also often found in the middle and inter-brain. The situation of the sclerotic nodules, or foci is entirely independent of the structure of the nerve substance and the course of its fibres. Sometimes being only in the

gray, or in the white substance; occasionally they occur in both the gray and white substance. They are distinctly separated from the normal surroundings. The foci are fairly easy to recognize with the naked eye, from their gray color. Microscopically much larger foci are seen in the shape of round or angular circumscribed spots. From the onset the disease is chronic and focal.

As to etiology, significance was for-

mally given to exposure to cold, over-exertion and mental emotions, but it has not yet been determined that they are positive factors in causation. It is also still undecided whether syphilis plays any part in the etiology of multiple sclerosis.

SYMPTOMS.—The prominent motor symptoms are the intention tremor, paresis, disturbances in gait and nystagmus. The tremor in multiple sclerosis comes on only with intended movements and usually does not show a regular rythmical character, but is unequal and jerking. A distinction from the constant rythmical oscillations of the limbs in paralysis agitans. The tremor is most marked in the upper extremities, as shown when the patient tries to take hold of something, or bring a glass of water to his mouth, etc.

When the patient is quiet the tremor ceases entirely; if he is mentally excited, the tremor is usually more marked. The gait is completely spastic, paretic and ataxic; hence the disease may be confounded with tabes dosalis.

Nystagmus shows itself in the form of a slight lateral twitching of the eyeballs on fixation. A disturbance in speech is often a noticeable symptom. The speech is slow, scanning, obscure and sometimes almost incomprehensible. The tendon reflexes are considerably increased. In the course of the disease there often appears a psychic weakness, which may increase to marked imbecility. A condition of mental exaltation, or melancholia, may be present (*vide infra*). We must also mention the occurrence of apoplectiform attacks. After slight prodromal symptoms, such as headache and vertigo, loss of consciousness and hemiplegia come on quite suddenly. After a day or two consciousness gradually returns and the hemiplegia soon disappears.

DIAGNOSIS AND PROGNOSIS.—The diagnosis of multiple sclerosis in typical cases

is sometimes quite impossible, as any simple symptom of the disease may lead to a wrong diagnosis. However, a diagnosis is usually not difficult to make in the typical cases where a group of the characteristic symptoms are manifest. The diseases one is most often called upon to differentiate between are paralysis agitans and tabes dorsalis.

The prognosis in multiple sclerosis is quite unfavorable. The disease may, of course, last for a long time and there be periods when the patient may enjoy a remission of symptoms, yet the clinical course of the disease is to grow progressively worse and end fatally.

My purpose in reporting briefly the following case is to show that any single symptom of multiple sclerosis may be a prominent symptom in some other disease and to emphasize the liability of a mistake being made in diagnosis.

This patient was referred to me by Dr. B. L. Wyman, of Birmingham, Ala. Name, A. W. H.; age, 51 years old; five feet and five inches high; black eyes; gray hair; widower, and occupation a drummer. His father died, at 78 years, of apoplexy, and his mother died, at 68 years, of intestinal trouble. He was considered a healthy child, and his health had been generally good as an adult. About two years ago his health began to decline, though he has been able to keep at his work, until two weeks ago, previous to coming to my place, he fell backward on slippery steps leading from his home and struck the back of his head against the doorstep. Blood flowed from a wound in the back of his head and later was followed by an enlargement of that part of scalp. Physical examination revealed a thin, poorly nourished body; dilated pupils, which reacted slow to light; patella reflexes increased and a more or less constant pain in the right knee. The gait was spastic, paretic and ataxic. On standing

with feet close together and eyes open, he could not keep his balance, but could stand still with eyes closed; a diagnostic difference from *tabes dorsalis*. The intention tremor of the head and hands was marked; expression was dull, memory poor and could not concentrate the attention to detail; the speech was slow, obscure and could not express his thoughts clearly. A noticeable symptom was the degree of psychic exaltation; he was optimistic and hopeful, and regarded his ailment of slight importance; said he would soon be all right.

While the treatment of multiple sclerosis does not promise much, still in many cases the sufferer can be relieved and the end delayed. The chief factors of treatment in this case was rest in bed; light, regular diet; the electric light bath to stimulate the circulation and increase metabolism, and warm baths. The patient made a satisfactory improvement and returned to his home after four weeks' treatment. A letter from the patient's family physician three months later said improvement had continued for a time and the patient was apparently enjoying a cessation of symptoms.

HISTORIES OF NEUROTIC FAMILIES.

BY J. LANSKI, M.D., CHATTANOOGA.

In this paper I wish to produce evidence to substantiate some of the contentions in a paper of mine in the November issue of *THE JOURNAL*. The case histories are of families with whom I am acquainted professionally or otherwise. At first I shall cite a chain of facts from Scripture bearing on the same subject:

In Genesis (35: 16-18) we read: "And Rachel travailed and she had hard labor"—a son was born named Benjamin, who is the ancestor of the tribe of Benjamin. These are likened to "a wolf that raventh" (Gen. 49: 27), and are recorded (Jud. 19) as licentious, cruel, left-handed, and such skillful archers as "could sling stones at a hair's breadth and not miss." Ehud, a Benjamite, is a left-handed, treacherous bravado (Jud. 3). Saul, a Benjamite, when sought to be crowned, is found hid among the stuff (1 Sam. 10: 23). He is higher than any of the people from his shoulder and upward. He develops melancholia and delusions, tries to kill David and his own son, becomes a coward, practices necromancy and at last commits sui-

cide. His family is nearly extinguished (2 Sam. 9); Michal, his daughter is sterile (11 Sam. 6: 23), and his only surviving grandson is lame (2 Sam. 4: 4). Osler assumes the lameness to be infantile paralysis, but for argument's sake let us say it was a case of talipes.

Saul of Tarsus, known as the great apostle Paul, claimed to be a Benjamite, is described as "a man of moderate stature with crisp [scanty] hair, crooked legs, blue eyes, large knit brows and long nose. At times looking like a man and at times like an angel; of fiery temper, impulsive, impassionate to an extreme; now exulting in boundless joy and now sorely depressed and gloomy." He is an epileptic.

Mordechai, also a Benjamite, being recorded with no blemish, is an example of atavism.

CASE 1.—Two sisters and one brother, A, B and C, all suffer of almost continuous headache. They take cannabis indica with advantage. A son of C, from his first wife, is a silly, vain-glorious, migraine

fellow, excessively altruistic and fails in every undertaking. The oldest of his second marriage is a left-handed egotist; the second is congenitally blind; the third, partially so; the fourth, a clever lad, has bad vision and exaggerated squint of both eyes; the fifth is with no blemish, as far as can be seen. The third and fourth have a peculiarity of contracting any infectious disease within their reach; no alimentary trouble.

The oldest daughter of A, apparently normal though with headache, is married to a man who developed writer's cramp while in the old country. Here he became a dyspeptic, suggesting occupation neurosis of the stomach. He has been taking all kinds of sedatives, tonics and stimulants and is now a nervous wreck. Whether drugs are impotent or the alcohol he received through prescriptions have counteracted the effects of drugs I cannot say. Four or five of their children died of marasmus. The baby, two years old, is a full year behind in teething, talking and walking; the other three are apparently normal. The oldest son of A, aged twenty, has about ten per cent of his hair gray. A sister had recently her first attack of epilepsy; is taking anti-pyrine with benefit; another sister is normal..

A son of B died at the age of twenty of some sort of hystero-epilepsy; a girl aged seventeen has developed a form of hystero-epilepsy. Drugs, electricity, suggestion and hypnotism were of no avail. A course of rest cure has done wonders. Of the two elder brothers, one is left-handed and melancholic; the other is himself only when he is overcrowded with work, be it substantial or flimsy.

CASE 2.—The grandparents are cousins; in collateral branches of the family there are thieves and insanity and a woman intensely slovenly. They have six sons and two daughters. The face formation of all

of them except the youngest, is so like one to the other, that intimate acquaintance only can tell who is who without erring. Let us designate them as A, B, C, D, E, F, G, H. G had smallpox while a girl and married a cousin. They had twins, monsters, with hernia and with other defects; died about ten. Charms and hags could secure life for only two. The oldest, a boy, a weakling, and the younger, a crippled girl, have been saved by the aid of the utmost effort at scientific feeding.

H is married to a silly man. Their children are normal, but have a proclivity of fabricating calumnies. Reproaches and rebukes could not improve the condition in the least.

All the children of A are normal, but the firstborn, who is devoid of any particle of ambition and is positive proof against strenuous life; hence his poverty; he is also extremely slovenly.

All the members of the family are generous and some are even recklessly so. B is an exception. He linked himself to a penurious family, who are also religious enthusiasts. Their children are on the border line of idiocy. Two daughters have defective speech and are sterile. The old man is growing deaf through dry catarrh of the middle ear.

C, if he were excessive and eccentric in any other respect as he is in religious matters, would not be tolerated in society. Part of his children are very dull. One is very bright, has her teeth most irregularly set, is suffering from lithemia and is developing regular gout.

The children of D are apparently with no blemish, but cannot tell the truth in matters of no consequence, though entirely reliable in business.

E is of great acumen, has flecks on the iris and is married to an intellectual woman. The firstborn was a kind of cretin, claimed to be rendered thus by

brain fever in early childhood. He died at the age of twenty of some fever, whether menengitis or typhoid I cannot say. He had squint of both eyes and was left-handed. The second son was bright in school up to the age of fifteen. Then he stopped and grew dull. The rest are highly intellectual. The youngest brother, a religious enthusiast and tolerant more than any other member of his family, is excessively charitable. He is married to a healthy woman. The firstborn is left-handed, the second is normal, and the third is left-handed, has defective speech because of highly arched palate, deviated septum, enlarged tonsils and mouth breathing. The fourth, a son, has all the defects of his immediate predecessor exaggerated. His temper and manner of eating are beastly. The laity regard him as a spoiled child and believe he could be reformed in a reform school, but he is a hardened neurotic and was incorrigible from the day of his birth. The three last born are normal. The father became an alcoholic some time after the birth of his first son. Every conceivable effort, save a sanitarium, which was not tried, was found futile in checking his cravings. His home is ruined.

CASE 3.—They are first cousins. I officiated at the birth of the second child. The mother seemed to have no pains before, during or after egress of the child. A few months later I noticed assymetry of the baby's face. On inquiry whether there exists alienation in the family, I received negative replies. Two years later the father developed mania and was sent by the county to an asylum. He was taken out and he died of exhaustion. The wife, though unreprouchably faithful, could give no evidence of the fact that she was affected in the least by her husband's untimely death. It was afterwards admitted that there is mental aberation in the family and that previous to the baby

mentioned she gave birth to a monster who died in early infancy. The baby is reported to be insane.

CASE 4.—Another time I delivered a woman who did not know when the baby was born, and delivery was over. One of her boys is ruptured; another one, who fell down a flight of stairs and hurt himself quite badly, did not utter a sound of complaint. Her husband deserted her; she lives in extreme misery, but never ceases smiling.

CASE 5.—The father was laid up for fifteen years with progressive spinal amyotrophy. The mother suffered from mucous colic from her girlhood. A daughter is lithemic and suffers also from mucous colic. She had her uterus curetted, the os stretched and supported with pessaries, dope and wine of cardui. She suffers just the same now, though an abstainer from all drugs. A brother is ruptured, has flat feet, and is being treated, in vain, for rheumatism in his feet. Another brother is ruptured and acquired emphysema; he is an athlete. Another has a highly arched palate, nasal obstruction, defective speech and irregular gout. While a child he was so bashful that he did not attend to calls of nature; hence he suffers from chronic colitis, which is not recognized, being overshadowed by nervous symptoms. Another brother is an alcoholic, and still another is melancholic.

CASE 6.—The father has poor vision and is emphysematous. The mother believes she possesses a charm that will ward off an evil eye or any other illness we are heir to. Her daughter has myriads of troubles, as to her health. A son is stuttering, is left-handed and is giving the police a great deal of trouble. He has been locked up several times. Not one of his schoolmates follows his example, evidently because such things are inborn, not acquired. They can be improved upon by example and experience, but never arise

spontaneously and are difficult of acquiring.

These families, degenerated as they are, gain in strength, with but few exceptions. By intermarrying and in the absence of the influences of dope or alcohol they have a good chance to survive. Arteriosclero-

sis is also absent, fortunately, for them. Tuberculosis is not known among them, though they do not live up to the ideals of hygiene; the craving for unnatural food, liquors or pleasures is unknown, because they are fed properly.

SARCOMA OF THE OVARY, WITH REPORT OF CASE.*

E. C. DEMOSS, M.D., NASHVILLE.

SARCOMA, compared to other tumors of the ovary, is a rare condition, only being found in 1 per cent, according to Henry Buford (*Ann. of Surg.*), and out of 488 cases of ovarian tumors reported by Briggs and Walker (*Journal Obstetrics*, February, 1908), sarcoma was found in only one case. The largest percentage of cases occur in young adult life, although relatively more common in children; 50 per cent of ovarian tumors under five years of age are of this nature (Kelly & Noble). Cases, however, have been demonstrated by Roberts in fetal life. He says they differ somewhat from those found in adults in repeating the embryonic character of connective tissue.

Ovarian sarcoma in the aged is more common than has been hitherto supposed, as shown by cases reported by Russell, Alshausen and others. John H. Gibbons reports a case occurring seven years after menopause.

Sarcoma arises from degeneration of fibroma, from the ovarian stroma, theca folliculi and corpus luteum.

The spindle cell variety is more frequent in adult life, while the round cell predominates in children. The former is characterized by newly formed, thin wall blood vessels or canals lined by endothe-

lium and surrounded by sarcomatous cells of the spindle variety, which are closely packed and irregularly distributed. The nuclei are fusiform, oval and often irregular in size. Karyokinetic figures and multiple nuclei are sometimes present. If there is a large amount of intercellular substance, the growth is known as fibrosarcoma. The latter, the round-cell sarcoma, is of two varieties, the large and small cell, and presents a more uniform appearance; the cells are round, oval, closely compact, with round and oval nuclei. The capillaries course in all directions among the cells, which is characteristic. The giant and myxosarcoma are very rare in this organ.

Endotheliomata are considered by C. W. Barrett (*Surg., Gyn. and Obstet.*) as a separate class of tumors, based on a complete study of eighty-four cases recorded in the literature and one personal case. He says this tumor cannot be made to conform to either sarcoma or carcinoma. This rare and highly malignant tumor originates from the endothelium of the blood and lymph vessels and perivascular lymph spaces.

Sarcoma is bilateral in 11 per cent of cases. The surface is smooth, hard or soft, depending on the consistency. Dilated veins and adhesions are sometimes distributed over the surface with areas of fluctuation, indicating cystic degenera-

*Written for Tennessee State Medical Association.

tion, and often hemorrhage is found in the degenerated areas.

On section the interior presents soft, granular, brain-like substance, unless it is the fibrosarcomata, which looks fibrous, with minute yellowish patches dotted about irregularly with patches of softening. The size varies from a hen's egg to a man's head, even larger, filling the whole abdominal cavity, as a case reported by Dr. Stewart (*Ann. Surg.*, April 2, 1906), which weighed 2,530 grams.

The growth disseminates by means of the blood to various portions of the body, as a case followed up by Amann, which ultimately died of general diffusion of the new growth. Metastasis was detected in the flat bones of the cranium, petrous portions of the right temporal, the sphenoid, inferior maxilla, left clavicle, ribs and scapular. In the liver were masses as large as potatoes; deposits were also found in gall, bladder, iliac, lumba and mediastinal glands, and, lastly, in the left optic, and the third, fourth and sixth nerves. The metastatic deposits clearly proceeded along the blood vessels and so reached the marrow of the bones.

Transition to carcinoma have been observed in a case by Speegberg, which he called myxosarcoma-carcinomata. Dr. Vinberg (*Med. Record*, July 10, 1905) reports a case in a woman 31 years of age after removal of a fibrosarcoma of the right ovary, eighteen months later developed intestinal symptoms, passed large quantities of blood at stool, developed a tumor of the rectum, which on examination proved to be carcinomata.

The symptomatology of sarcoma of the ovary varies greatly, depending upon the size, stage, complications and pathologic changes the growth and tissues have undergone. A distinction cannot be made from other ovarian tumors clinically, especially in the early stage, and only on supposition later. The symptoms, as in

other ovarian tumors, are due to perverted function, pressure irritation, and lastly, systemic manifestations. In the early stage, dysmenorrhea is frequently one of the first symptoms, with or without irregular menstruation, though some cases suffer from suppression of the menses, while in others the menstruation is profuse and too frequent; then again, as in a case reported by Stewart, the menstruation was not disturbed.

Amenorrhea is another symptom which sets in early, when the patient is very feeble. As in other types of ovarian dysmenorrhea, the patient suffers from all forms of nervous phenomena—namely, insomnia, nervous dyspepsia, hysteria, etc. Pain in the abdomen has been a symptom of many cases reported in the literature, especially in the later stages, presumably due to pressure and dragging on the viscera. A feeling of weight and tension accompanied by tenderness over the abdomen, often occurs. Tenesmus on standing or walking, constipation, flatulence and irregular attacks of colic have been reported, due to adhesions. Difficult breathing sometimes becomes distressing, depending upon the great size of the tumor and amount of ascites.

Pressure by the tumor on the bladder causes irritation of that organ, producing frequent micturition and tenesmus; on the rectum, producing constipation, and, later, edema of the legs, from pressure on the iliac veins.

The deranged digestion, anemia, subnormal temperature, hectic fever, loss of weight and strength, show that the system is saturated with the poison, producing a peculiar and characteristic discoloration of the skin, but not the same degree of cachexia as in cancer.

As in all gynecological work, bimanual examination furnishes more evidence than any one procedure. If the growth is small and not complicated, it may be located in

one or both flanks or behind the uterus in the pouch of Douglas; if movable, the range of motion depends on the length of the pedicle. These movements are independent of the uterus. If inflamed and adherent, the tumor is of course fixed. Soon the mass fills the pelvis, the uterus is displaced, crowding that organ into an abnormal position. The abdomen becomes distended by the growth and ascetic fluid, as the result of the increased intra-abdominal pressure; dilated veins may be noticed over the abdomen; hemorrhoids or varicosity in the femoral or saphenous veins may also be produced. Sometimes a bruit or pulsation quite distinct over the growth is elicited, as reported by Dr. Stewart.

The diagnosis of sarcoma of the ovary from ovarian cyst, benign tumor or cancer of the ovary, fibroid of the uterus, with a pedicle or cyst of the omentum, is impossible in most cases.

Extrauterine pregnancy must be considered, and ectopic kidney, spleen, tumors of kidney and rectum, inflammatory condition of the adnexa, encysted, tubercular peritonitis must not be forgotten. The most likely to be mistaken for ovarian sarcoma is ascites, because in many cases ascites is present. Therefore the importance of making a pelvic examination should stimulate us to a careful consideration of our pathology and advisability of the removal of all pelvic tumors at an early period, or as soon as the diagnosis of pelvic tumor is made.

Malignant disease may be a local affection in its early stages and early and thorough removal of it may result in permanent cure, while procrastination diminishes the chances of relief. As to the treatment of inoperative cases the X-ray or mixed toxine of erysipelas and bacillus prodigiosus, recommended by Dr. Coley, has not proven of any value in such cases in the hands of Dr. Geo. Shoemaker

(*American Med.*, December 26, 1903), who, after injection into the tumor proper and into the system remote from the tumor, in a series of cases, found the reaction, instead of improving the patients, exhausted them. I have not been able to find a report of ovarian sarcoma treated by Dr. Coley himself.

The case I wish to report came to me November, 1907. A married lady, 26 years of age, who had never been pregnant, came complaining of dysmemorrhea and pelvic discomfort preceding and during menstruation, which was irregular in amount. She began menstruating at the age of 14 years; had always suffered some discomfort, but had grown worse during the few months preceding her visit. She was very nervous, suffered from insomnia, nervous dyspepsia, spitting up her meals without retching; however, she was not very thin. At each menstruation she became unconscious, blind and eyes crossed. If when walking on the street she was seized with this cramping pain, she would have to be carried home, requiring morphine to quiet her. Bowel action caused pain; also walking and standing produced discomfort.

On bimanual examination two masses were found: one in the right flank, movable; the other behind the uterus, in the pouch of Douglas, which was fixed. Both tumors were very tender and produced great pain on palpitation. The uterus was normal; heart, lungs, blood and urine normal; removal was advised.

The usual abdominal incision was made and the tumors removed. They were the size of a small orange, smooth surface, hard, fibrous on section. They were examined microscopically by Dr. Litterer, who reported fribrosarcoma. The patient, after twenty months, is well in every respect, except at time of menstruation, when she is a little nervous;

sleeps and eats well and has increased twenty pounds in weight.

First, I report this case to show the importance of early pelvic examination in

all pelvic diseases; second, that malignant disease of the ovary, if taken in time, offers the best chance of recovery when thoroughly removed.

REPORT OF SURGICAL CLINIC.

HELD BY M. C. M'GANNON, M.D., NASHVILLE.

GENTLEMEN: Today it gives me much pleasure to invite your attention to some unusual, but interesting, cases.

The first patient who I have to bring before you is a young woman, 22 years of age, who has been married three years. She is the mother of one child, which was born dead after a prolonged labor, two years ago. The delivery was not instrumental. The puerperium was normal, except that she was unable to void her urine, a catheter being used for the first four days, after which the urine escaped without the patient's being able to control it. She remained in bed three weeks. Her menstrual functions have always been, and are now, normal. She has, however, considerable leucorrhœa. Since childhood she has enjoyed good health, except for the present trouble, which dates from the birth of her child two years ago.

She comes to us complaining of an inability to control the escape of urine from the bladder. She also states there is a free leucorrhœal discharge, and that she suffers from an irritation about the vulva and the inner upper part of the thighs. As you look at this patient you see that she is a well-preserved, robust young woman.

We find, upon examination, that the thoracic organs are normal. The abdominal structures also present no evidence of disease. Bimanual examination demonstrates that the uterus is in its normal situation, but the cervix is felt to be lacerated in several directions. The examining finger also feels an opening in

the anterior vaginal wall, through which it can be passed up behind the pubic bone.

It is obvious that this patient has a large vesico vaginal fistula. This we will further prove by direct visual inspection. We will now expose the vaginal canal by using a Sims speculum to retract its posterior wall, through which the red bladder mucous membrane protrudes, but you also see a badly lacerated and diseased cervix. We will now examine the rectum, and you see that the patient suffers from hemorrhoids. She is here for the purpose of having these pathological conditions corrected, so we will proceed to amputate the cervix, repair the defect in the bladder, and remove the hemorrhoids.

With the patient in the dorsal position, these three operations can be performed easily. The cervix is, as you see, without difficulty brought into view by using a vaginal retractor. It is so badly lacerated that it cannot be repaired in a satisfactory manner. Its removal is clearly indicated.

In amputation of the cervix there are a few points that must be constantly in mind. They are: 1st. The removal of all of the diseased tissue. 2d. The securing of a proper flap of vaginal mucous membrane to cover the stump thus created. 3d. Provision must be made to keep the uterine canal open. 4th. Hemorrhage must be controlled. 5th. The flaps must be so applied to the uterine stump that there will be no pockets in which blood may collect.

A suitable flap can be had by freeing, with knife or scissors, the vaginal wall from the diseased cervix as high as may be necessary, after which the cervix may be cut away to the desired extent. The patency of the uterine canal can be maintained by introducing one or two sutures so that the vaginal mucous membrane will be united with the mucous membrane lining the uterine canal on each side of the opening (as shown in the diagram on the blackboard).

We will now introduce the angle sutures. Remember that the blood supply is derived from branches from the uterine cavity and that they reach the cervix on either side; hence in putting in these sutures, they must be introduced so that they will constrict these vessels and thus prevent any subsequent bleeding. The first sutures must be made to penetrate the vaginal flap at the side of the cervix from behind, then pass through the lateral edge of the uterus, after which it is carried through the flap in front. Two such sutures are used on either side of the vaginal canal. When they are tied, the effect is not only to prevent hemorrhage, but also to approximate the edges of the flaps, thus not only covering the stump but at the same time fixing them tightly to it so that there is no space left into which blood or serum can collect and invite infection.

This is the operation as devised and practiced by Dr. Thomas Addis Emmett, many years ago. It has stood the test of time and has not been improved upon since that master first gave it to the medical world.

The vesico vaginal fistula will now engage our attention. You observe here some scars, showing that an attempt has been made to close this opening. As a matter of fact, the patient has been operated upon twice before, but, unfortunately, without success.

Vesico vaginal fistula was considered to be an incurable disease until that great Southern surgeon, Marion Sims, more than threescore years ago, demonstrated that it was feasible to operate upon and cure this harassing condition.

The essentials for success in the repair of fistulæ between the bladder and the vagina are: 1st. A knowledge of the anatomy of these structures. 2d. A proper denudation and adjustment of the parts to be united. 3d. Absence of tension along the line of sutures.

It must be recognized that the bladder and the vagina are separate structures, and that they may be easily separated the one from the other, without danger or injury to either. Not only can the bladder be safely dissected from the vagina, but in large fistulæ it can be separated from the uterus and the vesico uterine fold of peritoneum can be pushed up so that the bladder, thus freed, may be brought down sufficiently to close any rent in its base. All tension can thus be overcome. To separate the bladder from the vagina, make an incision with a knife through the vaginal wall just outside of the cicatrix at the edge of the fistula. Then grasp the cicatrix with forceps and drag it forward, while with a blunt instrument the vagina is stripped from the bladder. This can be done almost as easily as one draws one's cuff from under one's coat sleeve. When the bladder has been thus sufficiently freed, the cicatricial tissue along the edge of the opening must be cut away. Now, the denudation is complete, and it only remains to close the opening in the bladder. This we will do with No. 1 non-chromicized catgut, and using for its introduction a non-cutting needle. Having thus closed the bladder fistula, we will push it up through the opening in the vaginal wall and bring the edges of the opening into apposition. We may use for this purpose catgut or

silkworm gut, just as we choose. Here, I am using silkworm gut, and the edges of the wound easily fall together.

We will now proceed with the removal of the hemorrhoids, using the ligature method, thus completing the operation.

The next patient coming before us is a woman 49 years of age, who states that with her, menopause has been established four years; that she is the mother of several children, all born after normal labors; that the only disease by which she has been confined to her bed, since childhood, was typhoid fever, from which she suffered about eight years ago. The attack confined her to bed for about six weeks. Since then she has had more or less indigestion.

Her present trouble began two years ago with colicky pains in the belly, and she has had a great number of attacks since then. She describes these attacks as coming on more or less suddenly, as being severe and often accompanied by vomiting. The pain has been always in the upper part of the abdomen and continued usually for some hours. It was always followed by some soreness. During the last few months the soreness has never ceased.

The pain has been felt through to the back, but has not radiated up to the shoulder or down through the loin to the bladder. She has had no frequency or difficulty of micturition. She has not had jaundice. The bowels are, and have been, constipated.

Colicky pain in the abdomen results from undue contraction of circular muscle fibers; hence, it is to be traced to the intestines, the uterus, fallopian tubes, ureters or gall passages. In this case, the situation of the pain in the upper part of the abdomen enables us to eliminate the uterus and fallopian tubes. The absence of any other symptoms complained of that would fix our attention

upon the urinary system, combined with the fact that an examination of the urine is negative, serves to exclude the ureters as being responsible for the suffering. Intestinal colic is referred to the umbilical region, and is not as a rule accompanied by fever or followed by soreness; hence, I think we may exclude the intestines from consideration. This brings us to the gall passages as the possible offenders.

When we remember that inflammation of the gall bladder and the bile ducts is a common sequela of typhoid fever, we have no doubt that this disease was the first factor in the diseased condition from which this patient is suffering. The colicky pain which she describes was in the epigastric region, the usual situation for hepatic colic. Cholecystitis is also prone to recur again and again if it does not end in a suppurative process, demanding immediate operation.

On examination, we find our patient has lost some flesh; she looks thin, and her complexion is muddy.

The thoracic organs are normal.

Abdominal palpation reveals that there is marked sensitiveness over the right side along the margin of the ribs. The muscular wall in this situation is tense and fixed. Indistinctly, I here feel a hard mass, which conveys the idea of concretions. Percussion demonstrates an increased area of liver dullness in this region.

The diagnosis of chronic inflammation of the gall bladder and ducts, with adhesions matting together the liver, stomach and intestines, is warranted. I have no doubt but there is also present a large mass of gall stones, which I am able to feel through the wall.

The only treatment for such a case is an operation, which we will now proceed to perform. An incision three inches long, through the outer border of the

right rectus muscle, exposes at once the lower margin of the liver, and the omentum and transverse colon densely matted together. As the operation is likely to be difficult, I will enlarge the incision by extending the upper end inwards, and the lower end outwards, thus giving it an "S" shape and at the same time causing the minimum measure of injury to the nerves and blood supply of the wall.

The next step is to separate carefully the adhesions binding the viscera together. Rough handling may cause troublesome bleeding and also rents in the intestinal or stomach walls. Now, having gotten the various viscera freed, you can see the shrunken, thickened gall bladder. Before opening it, I shall cover all of the other tissues with gauze pads, to prevent their being soiled with the infected material I expect to encounter in the gall bladder.

With scissors, the gall bladder is easily opened, exposing its quarry-like contents.

These stones are easily removed with forceps and fingers. The pus which is now escaping comes from a separate pocket, which is between the gall bladder and the liver, and which has resulted from ulceration of the posterior wall of the gall bladder. A number of stones have found their way into this pocket. This is a rare and unusual complication.

We will now examine the common bile duct, and I feel that it also contains stones. They are easily reached by slitting up the cystic duct to its union with the common duct, and thus I am enabled to remove the stones from it. We now have gotten 78 stones in all. It will be necessary to drain this area, and for the purpose I shall, with catgut suture, stitch a rubber tube into the common duct; the adjacent space I shall drain with a wick enclosed in a split tube. By closing the abdominal wall around these drainage tubes in the usual way, the operation is completed.

Journal Tennessee State Medical Association

Published Monthly by the Tennessee State Medical Association.

BOARD OF TRUSTEES:

W. C. BILBRO, M.D., Chairman.
B. D. BOSWORTH, M.D.

A. T. CLOPTON, M.D.
GEO. H. PRICE, M.D., Editor.

All communications relating to the Editorial Department should be addressed to Geo. H. Price, M.D., Editor, No. 146 Eighth Avenue, North, Nashville, Tenn.

Matters of business should be addressed to W. C.

Bilbro, M.D., Chairman, No. 146 Eighth Avenue, North, Nashville, Tenn.

The Tennessee State Medical Association is not responsible for any statements or opinions of individuals published in this Journal.

WITH this issue the second volume of THE JOURNAL is concluded. The body of THE JOURNAL has been composed of material contributed by members of the Association, with papers presented at the last meeting held in Nashville. It has been the policy of THE JOURNAL to avoid outside sources and reprints of articles from other journals, thus whatever merit there is in THE JOURNAL is due to the efforts of the members of this Association. It has not always been possible to fill its pages with papers presented at this meeting, but such others as have appeared have come from members of the Association at the request of the editor of THE JOURNAL. It is not always an easy matter to secure the necessary material for THE JOURNAL, hence the editor has been compelled to call upon those who are especially interested in its success to contribute papers and reports from time to time.

It was hoped that the County Organizations would avail themselves of THE JOURNAL as a medium through which they could give to the profession at large, the benefit of the work done by individual members of the County Societies throughout the State and that in addition to this, that County Societies would also report from time to time, through THE JOURNAL, as to the work done in their localities. While these opportunities have not been taken advantage of, yet we trust that

those who are interested in the success of the Organization and this, its organ, will, in future, give more attention to these particular features which would add greatly to the interest throughout the State.

The coming meeting gives promise or being one of exceptional interest, and should afford an opportunity for all who are interested, to hear discussed questions of immediate and vital importance to the entire medical profession of the State.

The program to be presented, the preliminary issue of which was in THE JOURNAL for March, is one of broad scope and vital importance, and it is very desirable that every member of the profession who can will be present to take whatever part he may in this interesting meeting, soon to be held in Memphis.

General information concerning arrangements for the meeting was published in the March issue of THE JOURNAL and special emphasis was laid upon the arrangements made with the railroads for the benefit of those attending this meeting. It would be well to refresh your memory as to these particular points and to read, again, the article containing the information referred to.

We hope that the meeting will be the success which it now promises and hence urge you to be present; in fact, we expect to see *you* there.

CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION AND OF THE COMMITTEE ON MEDICAL LEGISLA- TION OF THE AMERICAN MEDICAL ASSOCIATION.*

Held in Chicago, February 28-March 2, 1910.

HERETOFORE the annual conferences on medical education and medical legislation have been held at different times and places. Since the work of the two conferences was so closely related, however, and since many delegates were being asked to attend both, it was determined this year to hold the conferences of these two committees of the American Medical Association at the same time and place. This joint conference met at the Congress Hotel at 10 A.M. and was called to order by Dr. Arthur Dean Bevan, Chicago, Chairman of the Council on Medical Education.

ADDRESS OF CHAIRMAN.

DR. ARTHUR DEAN BEVAN, Chicago: We are called together for the purpose of improving the medical educational standards. Many of us here know the difference between the modern intelligent medical care and the ignorant charlatan care of the sick. 1. We have seen the woman dying of child-bed fever which might have been prevented by the intelligent aseptic conduct of her confinement. 2. We have seen the child dead from unrecognized and untreated diphtheria, when the death might have been prevented by early laboratory or intelligent clinical diagnosis and the proper use of antitoxins. 3. We have seen the pinched and dusky face of the man dying of peritonitis, which could have been prevented by early diagnosis and proper operative treatment. The public does not as yet realize the importance of public health measures and of measures aimed at securing properly trained medical practitioners.

From a study of the subject of medical education during the last eight years, I desire to present to you briefly some conclusions:

1. Medical education and medical educational standards are not in a satisfactory condition in this country, and, although great improvements have been made in the last ten years, conditions as a whole are unsatisfactory.

2. It costs more to conduct a modern medical school than the amount which can be obtained

from students' fees. The 60 or 70 schools which should survive must receive either state aid or private endowment.

3. The medical school of the future must be developed as the medical department of a university.

4. The study of modern medicine demands: (1) a certain preliminary education; as a minimum this should be eight years in the primary school; (2) four years in the high school; (3) at least one year in special preparation in the pre-medical sciences of chemistry, physics and biology; (4) four years in the medical school, two years in the laboratories of anatomy and physiology, pathology and pharmacology; two years in clinical work in medicine, surgery, obstetrics and the specialties; and finally (5) at least one year of practical work as an intern in a hospital. And the time has about arrived when provision should be made for including this hospital year in the medical course.

5. The State licensing boards of the various States should have the legal power to insist on a proper preliminary education and a proper medical course, and they should have the right to refuse recognition to work done in colleges not offering proper medical instruction and the examination for medical licensure should be of such a practical character and so thorough as to determine the ability of the applicant to practice medicine. This power is necessary in order to protect the people of the State against ignorance and quackery. No public health measure is of greater importance than that aimed at securing properly qualified medical practitioners.

6. In order to secure proper medical standards throughout the country, we must have the united support of the State boards, the medical profession, the medical schools, the universities, and, what is most important of all, public opinion.

7. In order to obtain this support we must carry on a campaign of education showing what the existing conditions are and what changes are needed in order to secure conditions which will best safeguard public health, secure proper medical attention for the sick and aid in the advancement of medical knowledge.

*Abstract report, Journal A. M. A.

SECRETARY'S REPORT: INSPECTION OF MEDICAL COLLEGES.

DR. N. P. COLWELL, Chicago: All the work done by the Council on Medical Education since it was created in 1904 has been focused on the investigation of medical colleges preparatory to issuing a classification of medical schools. In making the investigation, the chief aim has been to point out reasonable standards of medical education and to assist the colleges in any way it could in the light many of them have been making to keep pace with the advances, which through modern methods of research have been made in knowledge of the causation and treatment of disease.

Following the first tour of inspection, the Council was criticised in certain quarters for not publishing outright its classification of medical colleges. That classification was not published, however, because the Council desired to give a number of colleges which were contemplating improvements the opportunity to make good. The delay has been more than justified. Many colleges have made extensive improvements, numerous mergers have been brought about, and on the whole, the situation has been greatly improved. The general conditions as revealed by the first inspection, however, were given the widest possible publicity, so that at the present time any plea of ignorance of the demands of modern medicine is unworthy of consideration.

Including pseudo-medical colleges, there is an amazing variety of institutions professing to teach medicine in whole or in part, which are annually turning out thousands of graduates who seek the privilege of practicing medicine. While some of these graduates may be thoroughly competent, there are, doubtless, many who are illiterate, untrained, and decidedly incompetent. While they may differ greatly in their theories of disease and their methods of treatment, those who by whatever means secure the right to practice will be alike in this respect: they will all be required to differentiate between the normal and the abnormal; they must determine the nature of diseases, injuries and deformities, and in many of their cases what they do or fail to do will mean the life or the death of the patient.

The point to be borne in mind is that an osteopath is required to make a diagnosis just as a medical practitioner is, and, therefore, needs a similar training in the fundamental medical branches. Lower educational standards for osteopaths, therefore, are a serious menace

to the public and an unfair discrimination against medical practitioners. Regarding osteopathic colleges also it should be stated that owing (a) to their lower preliminary requirements, (b) to their shorter course for the osteopathic degree, (c) the few instructors in their faculties who have had a scientific medical training, and, more important still, (d) to the serious if not absolute lack of laboratory equipment and clinical facilities not one of the osteopathic colleges in the United States can be compared even with those medical colleges which have been rated far below 50 per cent by the Council on Medical Education.

The only legal barrier which can protect the public from ignorant, untrained and incompetent practitioners is the State medical licensing board. It is of extreme importance, therefore, that in each State there should be a single licensing board, that its members should be selected because of their special fitness for the work involved and that this board should be given full authority in the premises. Instead of that we now have in our forty-nine States and Territories eighty-two different boards of medical examiners, including the sectarian boards. In some States the responsibility for defending the public against ignorance, incompetence and fraud, is divided among as many as four separate boards. The time has come, however, when the medical profession and the people of each State should see to it that a single board of competent medical examiners shall control the licensing of all practitioners of medicine and that this board be given full authority. This one barrier between the sick and afflicted and the crowds of ill-trained and incompetent practitioners must be made effective.

REPORT OF THE SPECIAL COMMITTEE ON PRACTICAL TESTS AT STATE LICENSE EXAMINATIONS.

DR. W. S. FULLERTON, St. Paul: After about a year's trial in their respective States your committee finds the practical examination on certain subjects in the curriculum for State licensure eminently satisfactory. The State boards which have adopted it began in a tentative way, but experience leads the committee to believe that it is capable of considerable extension and development and worthy of universal adoption by State examining boards. The committee believes that the practical examination, more than any one thing, compels the candidate for license to come before the board with real knowledge in the subjects to which it is applied, obtained by well-directed work, and that it effectually

does away with the "quiz-compend applicant" superficially and specially crammed to meet the ordinary written examination.

Your committee recommends that State examining boards shall require practical examination in the following subjects: diagnosis, pathology, histology, bacteriology, urinalysis, obstetrics and anatomy. While this may sound formidable, the committee is convinced that it is feasible. For example, on the basis of one hundred applicants, a physical diagnosis examination can be completed in five hours by providing ten subjects, taking the class in relays of ten, each to examine one case and to be allowed half an hour for such examination. The practical in anatomy can be carried on concomitantly, each relay passing from one to the other. The committee recommends that the present written examination in anatomy (which is necessarily book anatomy) be dispensed with, and a practical examination consisting of a description of prepared specimens be substituted, believing that one such specimen correctly described is of more value as a test of anatomic knowledge than ten answers which may involve only the question of memorizing from a quiz compend. The committee also recommends that the practical examination in histology, pathology, and bacteriology shall consist in the identification of a sufficient number of microscopic slides and gross specimens. The committee further recommends that there shall be a practical chemical and microscopic examination of one or more specimens of urine.

PRACTICAL EXAMINATIONS IN OHIO.

DR. GEORGE H. MATSON, Columbus, Ohio: In a supplementary statement, Dr. Matsou, a member of the committee, called attention to the results of practical examinations which were inaugurated by the Ohio board in June, 1908. Since that time applicants' grades in the laboratory branches show a marked improvement over the grades given before such tests were adopted. The examination of blood, sputum, feces and stomach contents is also suggested. Examination in clinical medicine may be inaugurated by presenting cases of readily recognized heart and lung lesions, enlarged liver and spleen in satisfactory subjects, syphiloderms and easily recognized skin diseases. In anatomy, the applicant may be asked to indicate and name points of interest on a given bone, to outline the various organs in the living subjects, and to locate points of interest that may be required of him.

In obstetrics, the manikin may be used, and it is suggested that the applicant be required to

demonstrate and diagnose positions and to demonstrate the treatment of abnormal position. He should also be required to demonstrate the use of the pelvimeter. Practical work in refraction may also be added. Six examiners could examine seventy-two applicants in six hours.

TUESDAY MORNING SESSION.

REPORT OF THE COMMITTEE ON ORGANIZATION OF A STATE BOARD OF MEDICAL EXAMINATION AND LICENSE.

DR. W. H. SAWYER, Michigan, chairman, read the report of this committee, stating that there should be a board of medical examiners separate from the State board of health. Several States have tried the combined board of health and medical examination, but have, after experience, separated them, and those States in which the two boards are already combined are endeavoring to have the division made.

The examining board should be single.

The examining board should be non-sectarian. However, under existing circumstances, it does not seem practicable or possible of accomplishment. In nineteen States the law provides for a mixed or sectarian board. Of seventeen States in which the law is silent as to sect, fourteen reported through the secretary of the board, seven advocating a mixed board, three a non-sectarian board, and from four there was no expression.

The examining board should be appointed by the governor on nomination of the State society. Any other attempted method at this time would more than neutralize the good effect of the medical board on the profession and people at large.

The secretary should be a member of the board. When possible he should be a member of the board, but not necessarily so.

The examining board should be entirely distinct from all educational institutions. This applies to every State in the Union except New York, where the University of the State of New York is a corporate institution, executive in its character and non-teaching.

In connection with the report of Dr. Sawyer, Dr. W. Jarvis Barlow, California, presented some statistics from that State which gave a general idea of the fitness of such schools to educate students in medicine.

REPORT OF THE COMMITTEE ON QUALIFICATIONS OF APPLICANTS.

DR. S. D. VAN METER, Denver, chairman of the committee, presented this report:

It is unquestionably desirable that all applicants for license to practice medicine should be required to furnish proof of having received preliminary and collegiate education equal to that standard recommended by the Council on Medical Education. The members of the committee feel that all boards cannot afford to adopt these requirements for all applicants. Nothing can be said against its adoption for those making application for license on credentials, but to deny those wishing to make application by examination the right so to do raises a very serious question. The committee believes that only the fundamental branches should be included in the list of subjects for examination, and that all questions on *materia medica* and therapeutics should be excluded. It is not advisable for the State to encourage sectarianism in medicine, and it has no more right to recognize a school of medicine than one of theology. Examinations, in the opinion of the committee, should be oral, clinical, and written. They should be practical and designed to furnish the examining board with adequate information on which to determine the educational and moral qualifications of those examined. The committee believes that examining boards should have the authority to determine the good standing of colleges. They should arrive at their conclusions by an unbiased review of all obtainable data, but owing to the cost and physical impossibility of making personal investigations of colleges at a distance, boards must of necessity at present rely chiefly on the reports of the Council on Medical Education and the Carnegie Foundation for the Advancement of Teaching.

REPORT OF THE COMMITTEE ON THE DEFINITION OF THE PRACTICE OF MEDICINE.

DR. L. M. HALSEY, New Jersey, presented the following definition: A person practices medicine and surgery within the meaning of this act who holds himself or herself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, physical or abnormal mental conditions, and who shall either offer or undertake by any means or methods to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, abnormal, mental or physical conditions.

PROVISION FOR EDUCATIONAL STANDARDS IN A MODEL MEDICAL PRACTICE ACT.

DR. N. P. COLWELL, secretary of the Council on Medical Education, Chicago: No practice act

can be considered a model which does not provide for a single board of medical examiners, or a single authority for the enforcement of its requirements. Nor can it well be considered a model unless it provides that the members of this board are to be selected because of their special qualifications for the duties involved, rather than for political or other reasons. Unless these two points are safeguarded, any provision for educational standards will be of limited value. With our form of government, a single board of capable medical examiners is the best and only legal barrier which can be placed between a suffering humanity and the hordes of would-be practitioners being turned out annually from the one hundred and sixty or more medical institutions in this country, many of which adhere to no definite standards, and have little or no facilities for the satisfactory training of medical practitioners. Taking it for granted that a single board of able medical examiners is provided for by the practice act, then the simplest wording of the clause, providing for educational standards is the best. A model practice act should not attempt to define educational standards nor what should constitute a medical college in good standing, because standards are rapidly changing, but should give the board the authority to fix standards.

The requirement of graduation from a reputable medical college, as shall be determined by the board, affords a double assurance that all applicants granted licenses are well qualified to practice medicine. First, a medical college which the board knows is reputable has certified to the applicant's fitness to practice medicine by having granted him its diploma; and, second, the State board has subjected the applicant to its examination, which must have been satisfactorily passed before the license is granted.

REPORT OF THE COMMITTEE ON RECIPROCITY AND REGISTRATION.

DR. CHARLES H. COOK, Massachusetts, read the report of this committee:

All medical legislation is embraced under what is called the police power, and has to do with the protection and benefit of the public. Legislation relating to reciprocity should have for its object the public welfare, else such legislation cannot be justified. To justify a law establishing reciprocity between States, it must be made clear that it would result in better protection to the inhabitants of the respective States.

For what purpose are the various State boards

of registration established? To protect the inhabitants of the respective States from unqualified physicians.

Can the duty and the responsibility of thus protecting the inhabitants of any State be delegated to the examining boards of other States? There can be but one answer to this, and that is that each State board is the only board to pass on the merits of applicants for registration in its State, and such powers cannot constitutionally be delegated to anyone else.

The committee could not recommend any law providing for general reciprocity. The suggestion was made instead that each State board be given authority to pass on the merits of each physician applying from another State, and whenever his credentials, affidavits and general qualifications would warrant such action, that he be registered without full examination.

What provisions for the registration of licentiates should a model law contain, and should any provision be made for county registration? If so, before what officers? As the purpose of registration is the establishment of a legal record accessible to the people whom it is intended to protect, the records should be sufficiently convenient to permit of prompt reference. The entry of registration should not only be with the State board, but with and before the local registrar of legal records, whether it be county, town, or district or other subdivision of the State existing. Also a record of registered names of the whole State should be accessible in each subdivision of records to permit of knowledge of the standing of any licentiate who may come from a neighboring or a distant county in the State.

REPORT OF THE COMMITTEE ON REVOCATION OF LICENSE AND PENALTIES.

In the absence of the chairman of this committee, Dr. E. L. Stevens, Iowa, the report was presented by Dr. B. R. McClellan, Ohio:

1. Should the State licensing board have power to revoke a license? If so, on what ground? Yes, subject to an appeal by the defendant to the district court.

2. Should such revocation by the State board be subject to the review of the courts? If so, should this include only a review of the proceedings of the board, or should the review include the question at issue and the evidence introduced? Yes, on appeal, in which case the courts should review the proceedings of the board and consider the merits and all the questions at issue in the case, with the thought of justice to all

concerned and the further thought of protection of the public.

3. Should a model medical practice act impose a penalty for obtaining money from patients through false representation, as well as for practicing medicine without a license? Yes, the medical practice act should impose a penalty for obtaining money from patients through false representation. Such penalties, if possible, should require restitution as well as fines and imprisonment. Such penalty should be as severe, more severe than frauds, in banking or insurance.

4. What should be the penalty for practicing medicine without a license? Should it be fine, imprisonment, or both? Both fine and imprisonment.

5. What should be the penalty for falsely representing one's self to be a legally qualified physician? If this question be interpreted as implying that the one thus falsely representing himself also attempts to practice under such misrepresentation, he should be subjected as suggested in the answer to question three.

6. Should revocation of license be temporary or permanent? Either permanent or temporary, depending on the evidence and public welfare.

7. Should unprofessional conduct or criminal abortion be considered a justifiable cause for the revocation of a license? Yes.

8. What other causes should justify revocation of license? Perjury while on the stand as expert witness.

9. What penalty should be imposed on limited practitioners who exceed their functions? The same penalties as those for practicing without any kind of a license.

TUESDAY AFTERNOON SESSION.

SOME OF THE CONSTITUTIONAL ASPECTS OF MEDICAL LICENSURE.

PROF. ERNEST FREUND, Professor of Jurisprudence and Public Law, University of Chicago: The serious difficulty of the licensing system lies in the details of its working out and relates both to its scope and its requirements. The problem has generally been treated as one of legislative policy and statutory construction. Our courts have found it possible to construe the term "practice of medicine" in such a way as to exclude osteopathy, optometry, massage and Christian Science treatment. In a great many cases the legislature has inserted liberal exceptions into the statute, especially so with regard to mental treatment. In other cases, and par-

ticularly with regard to osteopathy, it has prescribed special tests of qualifications. There is a double objection to a licensing law too sweeping in its terms, and not sufficiently regardful of simpler methods of treatment. One objection is that it will give color to the charge or suspicion of monopolistic exclusiveness; the other is that it will lead to exemption by judicial interpretation, or if the terms of the statute make that possible, to a breaking down of the law through non-enforcement, and the consequent toleration of a class of outlawed practitioners who might with advantage to the community be given a status of legal recognition. To discover the sound principles of medical practice legislation, a study of the history of legislation is as important as a study of judicial decisions. Under prevailing conditions in this country, the preponderance of argument is in favor of the maintenance of the license system, and sound principle requires a careful definition of licensed practice, and its protection as a right of property. The whole matter of qualification, differentiation and exemption, on the other hand, is one in which there must be much of positive or conventional regulation, and in which conclusions must be reached mainly on the basis of experience, expediency, and the compromise between conflicting views.

UNIFORM STATE LAWS.

PROF. ROSCOE POUND, University of Chicago, discussed the value of uniform State laws regulating the practice of medicine.

IMPORTANCE TO THE PUBLIC OF THE PROPER ENFORCEMENT OF MEDICAL LICENSE LAWS.

HON. HARRY OLSON, Chief Justice Municipal Court, Chicago: The American Medical Association is rendering the public most important service by its efforts to secure a uniform and high standard of medical education and licensure in all the States. The intelligent and thoughtful layman is encouraged by the progress made by the association in this regard since 1904. The wonderful progress of medicine in the last thirty years has increased the need of a thorough education of those who contemplate its practice. The machinery to enforce the medical license laws should not be in the board of health. That body has its hands full with the questions of public sanitation, quarantine, and occasionally, it is said, politics. There should be a separate body composed in the majority of medical men, but it would do no harm to have a lawyer on it

which should control not only the licensing of physicians, but the requirements of the accepted medical colleges and the requirements of preliminary education for entrance on the study of medicine as well. This body should have power on complaint and after giving due notice to hear evidence as a court and to determine whether a license once granted should be revoked for conduct involving immorality in the practice of medicine, and such offenses as dishonesty, conviction of crime, addiction to drug habits, etc. The power the Supreme Court of this State has to disbar a lawyer on a proper showing made to him by the State's attorney, the bar association, or an individual, after notice and after hearing of his dishonesty, is a tremendous factor in purifying the legal profession and in keeping its dishonest members within bounds. The licensed lawyers who were convicted during the ten years that I acted as a prosecutor in the criminal courts of Cook County were promptly disbarred by the Supreme Court. The physicians who served in the penitentiary promptly on their discharge resumed the practice of medicine, even though the crimes they committed involved falsification of vital statistics, and in one case, though the indictment was based on the charge of conspiracy to obtain money by false pretenses, the court and jury were of the belief that a murder had been committed. Without examining the law and decisions of the courts of this State, it would seem that the local medical profession had been derelict in the matter of its failure to present evidence to the State board of health against those members of their profession licensed in the State who ought to have forfeited their right to practice by unprofessional or dishonorable conduct.

The law of this State permitting the revocation of physicians' licenses for dishonorable conduct only applies to those physicians whose licenses were issued since 1899. As the law now stands, those licenses issued prior to 1899 may not be revoked. This defect in the law should be amended at the next session of the legislature, so as to apply to all physicians who are permitted to practice their profession in this State, no matter when their licenses were procured. The statute should be amended to state plainly that a license might be revoked for malconduct as a physician, which malconduct should be specifically enumerated in the statute. Conviction of a felony should be added as one of the causes. The responsibility for the proper enforcement of medical license laws falls first on the medical profession itself. It must furnish

the initiative. The machinery is at hand now for all licensed since 1899. An amendment to the law will reach all. The State's attorney and the courts are at the disposal of physicians and the people are with them.

THE ATTITUDE OF THE MEDICAL PROFESSION REGARDING MEDICAL PRACTICE LAWS.

DR. HENRY B. FAVILL, Chicago: The majority by far of the members of the medical profession have no concern or no conscious interest in medical practice acts. Elevation of the rank and file of physicians in point of fundamental education and practical efficiency clearly rests with the medical profession. Yet, as a practical feature, it is found to go only *pari passu* with public demands. The improvements in standards and requirements in medical schools in recent years have been particularly in those schools in which the nature of things would have improved under growing conceptions and higher ideals. All the leading colleges, as a mere evolution of medical thought, would have reached their present status without State requirements. To declare any candidate eligible who has a diploma from a recognized medical school; to recognize medical schools on the basis of fictitious presentation and fraudulent methods, and then to complete the test by an examination which any man with a good memory and no medical training can easily pass, is not only futile, but in the highest degree iniquitous. The more clearly the elements of qualification and competency can be set forth, the greater will be the influence among the minds of the public.

The early history of reform movements may be a necessity marked by arbitrary and restrictive measures. As a feature of permanent and well-constructed society, however, that custom which rests on widespread intelligence is the only custom which can be expected to endure. The merits of the suggestions which I make are three. (1) The highest degree of individual freedom; (2) the highest standard of classification as a guide to public judgment; (3) limitation of the stamp of approval or employment by the State to individuals whose qualifications have been actually determined. I believe that there is but one ground on which to justify the interest and agitation in the matter on the part of the profession. That ground is protection of public interests.

WEDNESDAY MORNING SESSION.

CHAIRMAN'S ADDRESS: WORK OF THE COMMITTEE ON MEDICAL LEGISLATION.

On the third day of the joint conference, Dr. Charles A. L. Reed, Cincinnati, chairman of the Committee on National Legislation, presided.

SECRETARY'S REPORT.

DR. FREDERICK R. GREEN, Chicago: The careful attention of members of the National Legislative Council should be given to the advisability of selecting, so far as possible, men for appointment on the National Auxiliary Legislative Committee who are interested in legislative matters and active in medical society and political work, and especially the selection of those who will give prompt attention to communications sent from the committee, the bureau, or the members of the National Legislative Council. It is also advisable to consider carefully each member's record or efficiency in making reappointments or filling vacancies in order that the best and most experienced men may be retained and those who show inefficiency or lack of interest may be eliminated.

The secretary then discussed vital statistics, pure food and drugs, State medical practice acts, expert testimony, sectarian legislation, reorganization of the legislative work of the association, and closed by saying that the value of the Bureau of the Council, the various State associations, and the American Medical Association itself, will be in direct proportion to the assistance and coöperation rendered by the representatives of the different States.

WEDNESDAY AFTERNOON SESSION.

REPORT OF REFERENCE COMMITTEE ON NATIONAL LEGISLATION.

DR. G. B. YOUNG, U. S. Public Health and Marine Hospital Service, presented the report of this committee endorsing the following bills now before Congress: S. 1017, H. R. 6184, Sixty-first Congress, first session. "A Bill to Reorganize and Increase the Efficiency of the Hospital Corps of the United States Navy and to Regulate its Pay." S. 1015, H. R. 4305, Sixty-first Congress, first session. "Authorizing the Appointment of Dental Surgeons in the Navy." S. 4745, H. R. 16892, Sixty-first Congress, second session. "To Equalize the Pay and Allowance of Assistant Surgeons and Acting Assistant Surgeons in the United States Navy." Bill submitted in draft

and not numbered: "To increase the Efficiency of the Medical Department of the United States Navy."

COMMITTEE ON FEDERAL AND STATE REGULATION OF PUBLIC HEALTH.

This committee reported that the bill now before Congress, asking for a department of health, will probably not be passed at the present time. The committee suggests that a bill be passed that will give recognition to the health interests of the country in the title of a department, and that within that department there be organized an efficient bureau of health to consist of all present public national health agencies.

On motion, the report was adopted.

REPORT OF COMMITTEE ON OPTOMETRY.

DR. GEORGE W. GAY, Boston: The committee believes most emphatically with the medical profession that as a rule a medical training is indispensable for a proper treatment of the eye on account of the close relationship between the eye and other parts of the body, and between eye symptoms, like headache and poor sight, and general constitutional conditions. Without medical training and with nothing but his crude untrained observation, how will the optometrist be able to tell the presence of deep-seated intra-ocular disease? The optometrists have few, if any, proper schools, and those already in existence are not officially recognized by the optical societies. The great State of New York has but one school of optometry, and that is located in Rochester, the city of New York having none. Furthermore, an overwhelming majority of the optometry or optical schools consist entirely of correspondence courses of a few weeks or months, giving a degree in which the title "doctor" is apt to figure prominently. The price of these courses varies from five to twenty-five dollars, and usually includes a handsomely engraved diploma. Optometry is a trade, not a profession. Like that of the optician, it is learned as are many trades, the watchmaker's, for example, by working in a shop as an apprentice for a time, then perhaps as a journeyman until able to set up business for himself. No special preliminary education is required, and he earns his living while learning the business. This is a very different experience from that of learning a profession, as that of an oculist, for instance, which requires several years of preparatory study before entering the medical school term of four years, then the hospital course and

the post-graduate courses, to say nothing of the considerable expense involved in this career of the practitioner.

Report adopted.

MEDICAL EXPERT TESTIMONY.

DR. L. M. HALSEY, New Jersey, presented the report of this committee.

As the result of a recent convass made by the Committee on Medical Legislation of the American Medical Association, it was found that of thirty-five States heard from, only two, Michigan and Rhode Island, had statutes regulating the admission of medical expert testimony to the courts. In summarizing its work the committee offered the following suggestions:

1. Give the courts the common-law power to charge the jury on the expert evidence.
2. Also give them the authority to call experts of their own motion under certain conditions, said experts to be paid by the county in which the case falls.
3. Resort more frequently to medical commissions and to the custom which obtains in ordinary consultations.
4. Let the courts allow to serve as experts only those who are properly qualified, and let them be treated as gentlemen in court, abolishing the custom, too prevalent in some places, of badgering and insult during cross-examination.

Could these suggestions be adopted, there would be little cause for complaint as to the character of medical expert evidence in our courts. Expert medical testimony would occupy a higher standard of excellence than it has ever done before, one commensurate with its importance and its universal demand.

REPORT OF THE CARROLL FUND COMMITTEE.

MAJOR M. W. IRELAND, U. S. Army, Chairman of the Carroll Fund Committee, gave a detailed statement of the work of this committee, giving the names of all subscribers and the amounts subscribed. The committee urged that action be taken to secure the property of Mrs. Carroll from future indebtedness, and on motion the committee was given power to act in this regard.

REPORT OF COMMITTEE ON CONCLUSIONS AND PLANS OF ACTION.

SECRETARY GREEN presented the following report of this committee:

1. *Resolved*, That it be the sense of this Conference that opticians be licensed as such by the

State medical boards, and that Dr. Gay's pamphlet be endorsed and ordered distributed.

On motion, this resolution was adopted.

2. *Resolved*, That the Conference recommends the passage of bills S. 1017, H. R. 6184, Sixty-first Congress, first session; S. 105, H. R. 4305, Sixty-first Congress, first session; S. 4745, H. R. 16982, Sixty-first Congress, second session; also the bill to increase the Medical Department of the United States Navy.

On motion, the resolution was adopted.

3. *Resolved*, That the Conference recommends the passage of the bill for the relief of the estate of late Assistant Surgeon W. H. Miller, U. S. P. H. and M. H. S., and recommends the passage of legislation in the interests of the personnel of the U. S. P. H. and M. H. S.

On motion, this resolution was adopted.

4. *Resolved*, That the Conference recommends that State food laws be so amended as to provide that advertisements of food and drug products correspond with labels; and that the drug section of the model pure food law conform as closely as possible to the National Food and Drugs Act.

On motion, the resolution was adopted.

5. *Resolved*, That the Conference heartily endorses the position taken by the President in his message to Congress in regard to national health legislation, and urges on Congress the passage of legislation looking toward such ends.

On motion, the resolution was adopted.

6. *Resolved*, That the Conference endorses the control by State medical examining boards the standards of medical education, and also endorses the standards of education, both preliminary and collegiate, recommended by the Council on Medical Education, but it is the sense of the Conference that adherence to these standards should not be allowed to result in the destruction of a single sectarian board.

On motion, the resolution was adopted.

On motion of Dr. Halsey, the report was then adopted as a whole.

The conference then adjourned *sine die*.

NOTICE!

Those of our readers who are interested in the various forms of Physiologic Therapeutics (including Hydrotherapy, Electrotherapy, Massage, Hyperemia, etc.) will be glad to know that it is proposed to shortly inaugurate a new journal devoted solely to the delineation of the progress made in these lines of therapeutic endeavor.

The American Journal of Physiologic Therapeutics will be published bimonthly and the subscription price will be \$1.00 a year. The names and addresses of all interested physicians should be sent in, and those desirous of subscribing at once may inclose their remittance when writing. It is to be hoped that a widespread interest may be aroused in this matter. Write now, while this is fresh in your mind, to *The American Journal of Physiologic Therapeutics*, 72 Madison Street, Chicago.

REPORTS OF COUNTY SOCIETIES.

[Those names marked with an asterisk, thus *, are reported as unpaid at the time of going to press.]

ANDERSON COUNTY.

Beasley, Dr. E. M., Coal Creek.
 Carden, Dr. W. L., Andersonville.
 Clear, Dr. John, Secretary, Clinton.
 Cox, Dr. Joe M., Edgemore, R. F. D. No. 1.
 Eblin, Dr. W. H., Windrock.
 Ford, Dr. E. H., Coal Creek.
 Hall, Dr. S. B., Clinton.
 Haun, Dr. L. A., Coal Creek.
 Hayes, Dr. J. T., Oliver Springs.
 Hicks, Dr. H. D., Clinton.
 Lambdin, Dr. L., Andersonville.
 Lee, Dr. C. B., Edgemore, R. F. D. No. 1.
 Phillips, Dr. T. H., President, Briceville.
 Richards, Dr. W. D., Briceville.
 Vinsant, Dr. C. C., Pless.

BEDFORD COUNTY.

Coble, Dr. T. J., Shelbyville.
 Drennan, Dr. G. T., Bellbuckle.
 Dyer, Dr. J. H., Wartrace.
 Fisher, Dr. R. J.,* Unionville, R. F. D.
 Freeman, Dr. J. K., Bellbuckle.
 Frierson, Dr. W. G., Shelbyville.
 Garrett, Dr. Robert,* Rockvale.
 Horton, Dr. G. E., Wartrace.
 Lacy, Dr. J. E.,* Pikeville.
 Landis, Dr. G. L., President, Unionville.
 Moody, Dr. G. W., Shelbyville.
 Moody, Dr. S. S., Shelbyville.
 Morton, Dr. J. L.,* Shelbyville.
 Orr, Dr. W. M.,* Shelbyville.
 Patton, Dr. E. W., Flat Creek.
 Ray, Dr. T. R., Normandy.
 Reagor, Dr. F. B., Secretary, Shelbyville.
 Richardson, Dr. K. W., Normandy.
 Sharp, Dr. W. T., Shelbyville.
 Trott, Dr. W. J., Tullahoma.
 Taylor, Dr. J. P., Haley.
 Sunstrom, Dr. C. A., Beech Grove.
 Wood, Dr. T. H., Bellbuckle.

BLEDSOE COUNTY.

Barnes, Dr. Isaac, Atpontley.
 Barnett, Dr. J. P., President, Pikeville.
 Harris, Dr. W. H., Pikeville.
 McGlunes, Dr. I. L., Pikeville.
 Meredith, Dr. A. O., Secretary, Pikeville.
 Patton, Dr. E. W., Litton.

BRADLEY COUNTY.

Bazemore, Dr. G. M., Cleveland (deceased).
 Bean, Dr. R. L., Cleveland.
 Chambers, Dr. T. E. A., Cleveland.
 Cochran, Dr. W. R.,* Cleveland.
 Cochran, Dr. R. P., Cleveland.
 Davis, Dr. T. H.,* Cleveland.
 Gates, Dr. Benj. F., Cleveland.
 Gilbert, Dr. C. T., Ocoee.
 Kibler, Dr. R. O., President, Cleveland.
 McKamy, Dr. T. J., Cleveland.
 Marshall, Dr. W. R.,* Cleveland.
 Parks, Dr. J. F., Old Fort.
 Quinn, Dr. E. A.,* Cleveland.
 Ramsey, Dr. G. A., Cleveland.
 Russell, Dr. G. T.,* Athens.
 Taylor, Dr. R. D., Cleveland.
 Shugart, Dr. J. L.,* Cleveland.
 Shultz, Dr. W. H., Cleveland.
 Speck, Dr. C. T., Secretary, Cleveland.
 Sullivan, Dr. R. P., Cleveland.
 Swan, Dr. E. A., Ocoee.

CAMPBELL COUNTY.

Brown, Dr. B. B., Peabody.
 Chittum, Dr. Chas. E., LaFollette.

Gaylor, Dr. William, Jellico.
 Gallaher, Dr. R. L., Careyville.
 Hefferman, Dr. J. L., Careyville.
 Henderson, Dr. J. Victor, LaFollette.
 Jennings, Dr. Thomas, Block.
 Lawson, Dr. A. L., Elk Valley.
 McClintock, Dr. F. A., Secretary, Newcomb.
 McPhetridge, Dr. J. D.,* Fincastle.
 Newman, Dr. A. T., Jellico.
 Potter, Dr. W. W., Westbourne.
 Rose, Dr. W. S., LaFollette.
 Rose, Dr. J. L., Jellico.
 Riggs, Dr. A. M., LaFollette.
 Robbins, Dr. M. H., Jellico.
 Scott, Dr. L. M., President, Jellico.
 Snyder, Dr. S. B., Jellico.
 Smith, Dr. Andrew, Woodridge.
 Woodward, Dr. D. M.,* Pioneer.
 Young, Dr. A. M., LaFollette.

CARROLL COUNTY.

Bryant, Dr. G. C., Secretary, McLemoreville.
 Compton, Dr. W. G.,* West Port.
 Cox, Dr. J. B.,* Huntingdon.
 Dennison, Dr. A. T.,* Atwood.
 Enoch, Dr. W. N.,* Huntingdon.
 Grizzard, Dr. A. M.,* Huntingdon.
 McCall, Dr. J. W.,* Huntingdon.
 McGill, Dr. H. D., Yuma, R. F. D.
 Murray, Dr. R. M., Trezevant.
 Wright, Dr. W. M., President, Huntingdon.

CHESTER COUNTY.

Baird, Dr. W. O., Secretary, Henderson.
 Carroll, Dr. James R., President, Henderson.
 Ozler, Dr. James B., Henderson.
 Perkins, Dr. I. E., Henderson.
 Sasser, Dr. John D., Henderson.

CLAIBORNE COUNTY.

Carr, Dr. J. C., New Tazewell, R. F. D. No. 1.
 Carr, Dr. M. B., President, Tazewell.
 Davis, Dr. B. M., Sec., New Tazewell, R. F. D. No. 2.
 Bay, Dr. W. M., Lone Mountain.
 Francisco, Dr. J. I., Arthur.
 Lynch, Dr. J. R., New Tazewell, R. F. D. No. 2.
 Lynch, Dr. George T., New Tazewell, R. F. D. No. 7.
 Miller, Dr. O. D., Goin.
 Needham, Dr. W. J., New Tazewell, R. F. D. No. 1.
 Sneed, Dr. T. B., Tazewell, R. F. D. No. 5.
 Suttle, Dr. B. A., Cumberland, R. F. D. No. 3.

CROCKETT COUNTY.

Booth, Dr. S. D., Maury City.
 Brassfield, Dr. S. W.,* Alamo.
 Cook, Dr. H. W., Alamo.
 Conyers, Dr. D. J.,* Chestnut Bluff.
 Dodds, Dr. O. L.,* Eaton.
 Eason, Dr. W. B., Bells.
 Harris, Dr. J. H., Bells.
 Hinton, Dr. J. A., Bells.
 Hess, Dr. N. I.,* Bells.
 James, Dr. F. C., Gadsden.
 Love, Dr. C. T., President, Alamo.
 McDonald, Dr. S. E., Secretary, Bells.
 Nunn, Dr. J. H., Chestnut Bluff.
 Oneal, Dr. M. E., Bells, R. F. D. No. 2.
 Powell, Dr. J. L., Friendship.
 Redmond, Dr. W. T., Alamo, R. F. D.
 Revelle, Dr. D. A., Maury City.
 Spence, Dr. W. G., Chestnut Bluff.
 Taylor, Dr. T. F., Eaton.
 Tullos, Dr. A. M.,* Gadsden.

DAVIDSON COUNTY.

Altman, Dr. J. T., 702 Church St., Nashville.
 Anderson, Dr. C. F., 139 8th Ave., N., Nashville.
 Anderson, Dr. W. B., Broad and 12th Ave., N., Nashville.
 Atchison, Dr. W. A., 132 8th Ave., N., Nashville.

- Bailey, Dr. Wm.* Jackson Bldg., Nashville.
 Barr, Dr. R. A., 1st National Bank Bldg., Nashville.
 Bartlett, Dr. R. E., Jr.* 705 2nd Ave., S., Nashville.
 Bauman, Dr. J. W., 422 Monroe St., Nashville.
 Bell, Dr. Bailey C., 135 8th Ave., N., Nashville.
 Beauchamp, Jno. A., Central Hospital, Nashville.
 Billington, Dr. R. W., 151 8th Ave., N., Nashville.
 Black, Dr. W. G., 1421 Church St., Nashville.
 Blake, Dr. D. B., 2012 West End Ave., Nashville.
 Bloomstein, Dr. S. M., Worthington Flats, Nashville.
 Bradford Dr. A. D.,* R. F. D., Bellevue.
 Brew, Dr. James,* 415½ Church St., Nashville.
 Bromberg, Dr. Perry, Jackson Bldg., Nashville.
 Brower, Dr. Chas.* Jackson Bldg., Nashville.
 Bryan, Dr. W. A., 146 8th Ave., N., Nashville.
 Bryan, Dr. O. N., 146 8th Ave., N., Nashville.
 Brooks, Dr. H. T., 1074 2nd Ave., S., Nashville.
 Brown, Dr. C. W., 418 Monroe St., Nashville.
 Brown, Dr. D. R., 1400 Broadway, Nashville.
 Brush, Dr. C. E.* 118 8th Ave., N., Nashville.
 Buckner, Dr. M. G., Jackson Bldg., Nashville.
 Buist, Dr. W. E., 213 8th Ave., N., Nashville.
 Burch, Dr. L. E., 120 8th Ave., N., Nashville.
 Butterworth, Dr. J. L.,* Whites Creek Pike, Nashville.
 Caldwell, Dr. Robt., Jackson Bldg., Nashville.
 Coles, Dr. Van H., 1505 Church St., Nashville.
 Cooke, Dr. A. B., Jackson Bldg., Nashville.
 Cowden, Dr. C. N., 118 8th Ave., N., Nashville.
 Crockett, Dr. S. S., Jackson Bldg., Nashville.
 Crawford, Dr. J. P., 131 8th Ave., N., Nashville.
 Crawford, Dr. J. Y., Jackson Bldg., Nashville.
 Culom, Dr. G. F.* R. F. D. No. 4, West Nashville.
 Culom, Dr. M. M., Wilcox Bldg., Nashville.
 Dake, Dr. R. W.,* 216 7th Ave., N., Nashville.
 Dabney, Dr. A. S., 139 8th Ave., N., Nashville.
 DeMoss, Dr. E. C., 415 1-2 Church St., Nashville.
 DeWitt, Dr. Paul, 139 8th Ave., N., Nashville.
 Dixon, Dr. W. C., 150 8th Ave., N., Nashville.
 Doak, Dr. R. S.,* 139 8th Ave., N., Nashville.
 Douglas, Dr. A. E., Central Hospital, Nashville.
 Evans, Dr. N. G., 2nd Ave. and Elm, Nashville.
 Edwards, Dr. G. F.,* Jackson Bldg., Nashville.
 Eve, Dr. Duncan, Sr., Pres., 700 Church St., Nashville.
 Eve, Dr. Duncan, Jr., 700 Church St., Nashville.
 Eve, Dr. Paul F., 700 Church St., Nashville.
 Ewing, Dr. W. G.,* Jackson Bldg., Nashville.
 Farrar, Dr. M. R., Tenn. Hospital, Nashville.
 Fort, Dr. R. E., 209 N. 7th Ave., Nashville.
 Frey, Dr. J. H.,* Edgar Ave., Nashville.
 Gaines, Dr. J. A., Jackson Bldg., Nashville.
 Gallagher, Dr. J. F., Jackson Bldg., Nashville.
 George, Dr. L., Battle Creek Sanatorium, Nashville.
 George, Dr. W. A., Battle Creek Sanatorium, Nashville.
 Glenn, Dr. W. Frank, 1st National Bank Bldg., Nashville.
 Glasgow, Dr. McP., Worthington Flats, Nashville.
 Goodwin, Dr. J. D., 1012 1st National Bank Bldg., Nashville.
 Graddy, Dr. L. B., Wilcox Bldg., Nashville.
 Grizzard, Dr. R. W., 302 6th Ave., N., Nashville.
 Haggard, Dr. W. D., 148 8th Ave., N., Nashville.
 Hale, Dr. G. W., Wilcox Bldg., Nashville.
 Handley, Dr. J. W., 1st National Bank Bldg., Nashville.
 Hargis, Dr. W. A., R. R. Del., Hermitage.
 Harris, Dr. A. W., 142 7th Ave., N., Nashville.
 Harris, Dr. J. E., P. O. Box 404, Nashville.
 Harrington, Dr. R. A., 8th Ave. and Broadway, Nashville.
 Haskins, Dr. J. B., 148 8th Ave., N., Nashville.
 Hayden, Dr. E. F.,* White Creek Pike, Nashville.
 Head, Dr. F. P.,* West Nashville, Nashville.
 Hilbitt, Dr. W. E., Waverly Place, Nashville.
 Hill, Dr. C. L., Edgar Jones Ave., Nashville.
 Hollabaugh, Dr. A. M., 801 S. 5th Ave., Nashville.
 Hubbard, Dr. G. W., 112 Maple St., Nashville.
 Hudson, Dr. Alberto, Jackson Bldg., Nashville.
 Hyde, Dr. H. B., 411 1-2 Union St., Nashville.
 Jackson, Dr. V. P.,* Foster and Meridian, Nashville.
 Jemison, Dr. A. B., City Hospital, Nashville.
 Johnson, Dr. J. T.,* 411½ Union St., Nashville.
 Jones, Dr. R. L., 151 8th Ave., N., Nashville.
 Keller, Dr. J. P., Worthington Flats, Nashville.
 Kinney, Dr. DeLan,* 131 8th Ave., N., Nashville.
 Lee, Dr. W. B., Jackson Bldg., Nashville.
 Leonard, Dr. N. C., 140 8th Ave., N., Nashville.
 Litterer, Dr. Wm., Vanderbilt Med. Dept., Nashville.
 McCabe, Dr. W. M., City Hospital, Nashville.
 McCampbell, Dr. W. E., 6th and Woodland, Nashville.
 McGannon, Dr. M. C., 118 8th Ave., Nashville.
 Maddin, Dr. J. W., 169 4th Ave., N., Nashville.
 Magan, Dr. L. E., Madison.
 Marr, Dr. Harrington, Mill Block (Church St.), Nashville.
 Meadows, Dr. J. T.,* 1st National Bank Bldg., Nashville.
 Miller, Dr. J. P., 207 8th Ave., N., Nashville.
 Morgan, Dr. H. W., 211 6th Ave., N., Nashville.
 Moore, Dr. J. W., Worthington Flats, Nashville.
 Morrison, Dr. W. J.,* 717½ Church St., Nashville.
 Morrissey, Dr. P. G.,* 917 12th Ave., S., Nashville.
 Neil, Dr. D. R., Jackson Bldg., Nashville.
 Nichol, Dr. A. G.,* Jackson Bldg., Nashville.
 Noel, Dr. L. G., 529 1-2 Church St., Nashville.
 O'Callahan, Dr. W. J.,* Post Office, Nashville.
 Overton, Dr. Jno., 120 8th Ave., N., Nashville.
 Oughterson, Dr. W. A., 135 8th Ave., N., Nashville.
 Padgett, Dr. Hazle, 139 8th Ave., N., Nashville.
 Parrish, Dr. W. A., City Hospital, Nashville.
 Pickens, Dr. D. R., 135 8th Ave., N., Nashville.
 Plunkett, Dr. J. D., 701 1-2 Church St., Nashville.
 Pollard, Dr. T. G., 135 8th Ave., N., Nashville.
 Powell, Dr. J. B.,* R. F. D. No. 1, Nashville.
 Price, Dr. Geo. H., 146 8th Ave., N., Nashville.
 Roberts, Dr. Deering J., 208 6th Ave., N., Nashville.
 Roberts, Dr. E. L., 131 8th Ave., N., Nashville.
 Robertson, Dr. C. A.,* 151 8th Ave., N., Nashville.
 Sharber, Dr. A. L., 140 8th Ave., N., Nashville.
 Sanders, Dr. E. M., 169 4th Ave., N., Nashville.
 Savage, Dr. G. C., 139 8th Ave., N., Nashville.
 Shannon, Dr. T. G., Woodland and 4th, Nashville.
 Sifford, Dr. W. R., 1st National Bank Bldg., Nashville.
 Smith, Dr. Larkin, 131 8th Ave., N., Nashville.
 Stephens, Dr. Jas. B., Polk Ave., Nashville.
 Stephens, Dr. John B.,* 152 8th Ave., N., Nashville.
 Stevens, Dr. Jno. W., R. F. D. No. 1, Nashville.
 Stonestreet, Dr. Reginald, Wilcox Bldg., Nashville.
 Sullivan, Dr. C. C., 131 8th Ave., N., Nashville.
 Sumpter, Dr. W. D., 131 8th Ave., N., Nashville.
 Tankersley, Dr. W. H.,* Waverly Place, Nashville.
 Teachout, Dr. S. R., 702 Church St., Nashville.
 Tidwell, Dr. G. W., 131 8th Ave., N., Nashville.
 Tigert, Dr. H. M., Sec'y., Worthington Flats, Nashville.
 Trawick, Dr. G. C.,* 210 6th Ave., N., Nashville.
 Trawick, Dr. A. M., 210 6th Ave., N., Nashville.
 Tucker, Dr. B. G., 302 S. 10th St., Nashville.
 Tucker, Dr. R. O., 140 8th Ave., N., Nashville.
 Weaver, Dr. Thomas,* Jackson Bldg., Nashville.
 West, Dr. Olin, Worthington Flats, Nashville.
 Wheeler, Dr. W. P., Belmont Circle, Nashville.
 White, Dr. Geo. R., 24 Bridge Ave., Nashville.
 White, Dr. Gordon, 610 1-2 Church St., Nashville.
 Wilson, Dr. O. H., Worthington Flats, Nashville.
 Witherspoon, Dr. Jno. A., 150 8th Ave., Nashville.
 Witt, Dr. W. H., Worthington Flats, Nashville.
 Wood, Dr. E. G., 133 8th Ave., N., Nashville.
 Wood, Dr. Hilliard T., 1st National Bank Bldg., Nashville.

DEKALB COUNTY.

- Durham, Dr. M. J.,* Silver Point, R. F. D., Tenn.
 Fuson, Dr. J. B., Smithville.
 Loring, Dr. C. A., Smithville, Tenn., R. F. D.
 Potter, Dr. T. J., Smithville, Tenn., R. F. D.
 Parker, Dr. W. W.,* Pres., Smithville, Tenn., R. F. D.
 Parker, Dr. W. B., Sec'y., Smithville, Tenn., R. F. D.
 Smith, Dr. T. J.,* Silver Point, Tenn.

DICKSON COUNTY.

- Harper, Dr. T. M., Dickson.
 Gurin, Dr. C. H., Dickson.
 Flowers, Dr. J. C., Dickson.
 Lovell, Dr. C. M., Dickson.
 Scott, Dr. W. S., Sec'y., Dickson.
 Sugg, Dr. W. J., Dickson.
 Walker, Dr. W. W., Pres., Dickson.

DYER COUNTY.

- Austin, Dr. D. T., Bogota.
 Brewer, Dr. J. D., Newbern.
 Burke, Dr. R. A., Dyersburg.
 Binkley, Dr. F. M.,* Newbern.
 Cale, Dr. J. D.,* Newbern.
 Cherry, Dr. E. O., Newbern.
 Craig, Dr. J. R.,* Dyersburg.
 Dulaney, Dr. O., Dyersburg.
 Dodd, Dr. O. L., Alamo.
 Ferguson, Dr. J. A., Dyersburg.

Edwards, Dr. Luther, Finley.
 Fowlkes, Dr. J. A.,* Dyersburg.
 Green, Dr. J. H., Trimble.
 Haskins, Dr. E. T., Newbern.
 Hornbrook, Dr. J. T.,* Dyersburg.
 Hall, Dr. L. B.,* Tatumville.
 Moody, Dr. A. H., Dyersburg.
 Nash, Dr. C. T., Dyersburg.
 Rawles, Dr. T. N., Dyersburg.
 Rawles, Dr. E. L., Sec'y, Dyersburg.
 Richardson, Dr. J. D.,* Fowlkes.
 Smith, Dr. J. H., Trimble.
 Sullivan, Dr. W. O.,* Churchton.
 Smith, Dr. W. F.,* Bonicord.
 Turner, Dr. C. H.,* Dyersburg.
 Turner, Dr. C. B. A., Newbern.
 Wynn, Dr. J. W., Moxey.
 Walker, Dr. N. S.,* Pres., Dyersburg.
 Walker, Dr. T. J., Dyersburg.
 Watson, Dr. W. T., Dyersburg.
 Williamson, Dr. W. E.,* Lenox.
 Holland, Dr. W. W., Ro-Ellen.

FAYETTE COUNTY.

Albright, Dr. J. A., Somerville.
 Battle, Dr. W. B., President, Galloway.
 Boals, Dr. A. O., Somerville.
 Brinkley, Dr. G. T., Fayette Corner.
 Cocke, Dr. J. H.,* Moscow.
 Crawford, Dr. John L.,* Willistown.
 Crook, Dr. C. N., Secretary, Rossville.
 McAuley, Dr. L. D., Oakland.
 Moorman, Dr. H. C.,* Somerville.
 Morrow, Dr. D. M.,* Oakland.
 Parks, Dr. J. E., Somerville.
 Robertson, Dr. C. W., Somerville.
 Rust, Dr. M. E., Yum Yum.
 Yancey, Dr. T. B., Somerville.

GIBSON COUNTY.

Allen, Dr. J. W., Rutherford.
 Barker, Dr. W. J., Trenton, R. F. D.
 Bryant, Dr. J. A., Bradford.
 Clopton, Dr. A. T., Milan.
 Cochran, Dr. T. N., Trenton.
 Donaldson, Dr. A. A., Brazil.
 Dodds, Dr. G. N., Eaton.
 Faucett, Dr. J. T., Trenton.
 Faucett, R. H., Trenton.
 Harwood, Dr. T. E., Secretary, Trenton.
 Hunt, Dr. R. H., Gibson.
 Koffman, Dr. J. N., Koffman.
 Matthews, Dr. E. C., Trenton.
 McRee, Dr. W. C., Trenton.
 Medlin, Dr. W. L., Dyer.
 Moore, Dr. J. C., Trenton.
 Oliver, Dr. G. W., Medina.
 Paris, Dr. J. C., Kenton.
 Penn., Dr. B. S., Humboldt.
 Rozelle, Dr. J. H., Gibson.
 Thompson, Dr. Sid, Humboldt.
 Tyree, Dr. E. C., Trenton.
 Walker, Dr. D. A., President, Trenton.
 Wyatt, Dr. F. E., Yorkville.
 Swink, Dr. W. T., Milan.
 Caldwell, Dr. B. D., Milan.

GILES COUNTY.

Abernathy, Dr. W. D., Pulaski.
 Abernathy, Dr. C. A., Pulaski.
 Abernathy, Dr. Shields,* Pulaski.
 Allen, Dr. A. M., Bufords.
 Aynett, Dr. R. E., Pisgah.
 Blackburn, Dr. Jas. K., Secretary, Pulaski.
 Black, Dr. W. E., Minor Hill.
 Baugh, Dr. John, Elkton.
 Butler, Dr. G. D., Pulaski.
 Cole, Dr. W. H., Minor Hill.
 Copeland, Dr. W. F., Campbellsville.
 Dean, Dr. A. W., Brick Church.
 Freeman, Dr. E. C., Pulaski.
 Grimes, Dr. G. C., President, Bodenham.
 Harris, Dr. John S., Minor Hill.
 Herbert, Dr. R. N., Aspen Hill.
 Lancaster, Dr. A. J., Pisgah.
 Lancaster, Dr. G. W., Pisgah.
 Legg, Dr. I. V., Pulaski.
 LaKue, Dr. J. A., Pulaski.
 May, Dr. J. P., Aspen Hill.

Morris, Dr. John, Bodenham.
 Neal, Dr. J. H., Wales.
 Sumpter, Dr. E. R., Pulaski.
 Waters, Dr. A. C., Prospects.
 Wilson, Dr. W. E., Pulaski.
 Woodard, Dr. B. H., Elkton.

GREENE COUNTY.

Brown, Dr. I. B., Mosheim.
 Blanton, Dr. M. A., Baileytown, R. F. D.
 Bailey, Dr. G. N.,* Baileytown.
 Bell, Dr. Jas. B., Greeneville, R. F. D.
 Britton, Dr. F. C., Greeneville, R. F. D.
 Borden, Dr. S. H., Greeneville, R. F. D. No. 2.
 Brumley, Dr. S. T., Greeneville, R. F. D., No. 5.
 Cloyd, Dr. J. W., Mosheim.
 Doak, Dr. H. P., President, Greeneville, R. F. D.
 Everhart, Dr. M. P.,* Midway, R. F. D.
 Fox, C. P., Greeneville.
 Hawkins, Dr. W. H., Greeneville.
 Huffaker, R. O., Chucky City.
 Hays, Dr. G. S., Jeraldstown.
 Jeffers, Dr. W. L., Baileytown.
 Neas, Dr. A. J.,* Parrottville.
 Myers, Dr. E. M.,* Bulls Gap.
 Ruble, Dr. H. H., Greeneville.
 Taylor, Dr. W. B., Greeneville.
 Taylor, Dr. H. M., Greeneville.
 Woolsey, Dr. T. H., Greeneville.
 Woodyard, S. W., Secretary, Greeneville.
 Wilhoit, Dr. J. S. J., Afton.

HAMILTON COUNTY.

Abernathy, Dr. T. E., Bates Block, Chattanooga.
 Abernathy, Dr. Y. L., Hill City.
 Anderson, Dr. E. B., over 739 Market St., Chattanooga.
 Anderson, Dr. E. C., 726 Market St., Chattanooga.
 Anderson, Dr. W. E., James Bldg., Chattanooga.
 Applegate, Dr. W. A., 1300 Penn. Ave., Washington, D. C.
 Atlee, Dr. J. H., James Bldg., Chattanooga.
 Bailey, Dr. J. W., Rossville, Ga.
 Banks, Dr. W. A., 313 Chamberlain, Chattanooga.
 Barker, Dr. H. M., Flintstone, Ga.
 Barrett, Dr. S. H., James Bldg., Chattanooga.
 Bearden, Dr. H. K.,* Glass St., E. Chattanooga.
 Bell, Dr. R. P., James Bldg., Chattanooga.
 Berlin, Dr. H.,* 110 McCallie Ave., Chattanooga.
 Blackwell, Dr. O. L., Worley.
 Bogart, Dr. W. G., 518 Georgia Ave., Chattanooga.
 Bogart, Dr. W. M., Hill City.
 Boyd, Dr. A. W.,* Loveman Bldg., Chattanooga.
 Broyles, Dr. J. N., East Lake.
 Byrd, Dr. E. H., Glass St., E. Chattanooga.
 Capell, Dr. John,* 258½ E. Main, Chattanooga.
 Carroll, Dr. C. T., Loveman Bldg., Chattanooga.
 Cheney, Dr. W. H., 13½ Eighth St., Chattanooga.
 Cleary, Dr. A. D., 602 Georgia Ave., Chattanooga.
 Cliff, Dr. J. W.,* Soddy.
 Cobleigh, Dr. C. A., Loveman Bldg., Chattanooga.
 Colmore, Dr. R. M., Loveman Bldg., Chattanooga.
 Cornell, Dr. R. R.,* Bates Block, Chattanooga.
 Cunningham, Dr. J. C., Hixon.
 Davis, Dr. K. D., Wiehl Bldg., Chattanooga.
 Deakins, Dr. B. A.,* E. Chattanooga.
 Duncan, Dr. Wm. A., Fort Stanton, New Mexico.
 Dietrich, Dr. W. A., Miller Bldg., Chattanooga.
 Dye, Dr. J. S., 5 East Eighth St., Chattanooga.
 Eblen, Dr. T. N., Tyner.
 Ellis, Dr. C. C.,* Columbia, Cal.
 Ellis, Dr. G. M., 211 East Eighth St., Chattanooga.
 Fancher, Dr. H. L., James Bldg., Chattanooga.
 Fowler, Dr. S. A., 1100 Whiteside St., Chattanooga.
 Gee, Dr. J. J., Loveman Bldg., Chattanooga.
 Gentry, Dr. J. A., Times Bldg., Chattanooga.
 Gibbs, Dr. Vaulx, 831½ Market St., Chattanooga.
 Gillespie, Dr. S. B., 211 East Eighth St., Chattanooga.
 Goodwin, Dr. J. L., 211 East Eighth St., Chattanooga.
 Gould, Dr. E. P.,* 232 East Main St., Chattanooga.
 Graham, C. G., 716 Market St., Chattanooga.
 Green, Dr. Jas. E., 276½ East Main St., Chattanooga.
 Gurney, Dr. C. H., Rossville, Ga.
 Haymore, Dr. G. P.,* 826 Market St., Chattanooga.
 Hayward, Dr. O. M., 16 McCallie Ave., Chattanooga.
 Henderson, Dr. W. H.,* Rossville, Ga.
 Hilliard, Dr. A. W., 826 Market St., Chattanooga.
 Hogshead, Dr. J. M., 602 Georgia Ave., Chattanooga.
 Holtzclaw, Dr. Cooper, 213 East Eighth St., Chattanooga.
 Hope, Dr. W. T., 101½ East Eighth St., Chattanooga.

Horton, Dr. J. W., James Bldg., Chattanooga.
 Hughes, Dr. O. G., Ooltewah.
 James, Dr. T. L., Orme.
 Jenkins, Dr. E. L., Soddy.
 Johnson, Dr. J. W., * 5 East Eighth St., Chattanooga.
 Johnson, Dr. E. C., * 213 East Eighth St., Chattanooga.
 Kerr, Dr. E. E., * 207 East Eighth St., Chattanooga.
 Lanski, Dr. J., * Chicago, Ill.
 Larimore, Dr. H. P., Sec., Bates Block, Chattanooga.
 Lenehan, Dr. Walter, * Loveman Bldg., Chattanooga.
 Macquillan, J. W., 600 Market St., Chattanooga.
 Marshall, Dr. W. C., * Brentwood.
 McGhee, Dr. J. B., 222½ East Main St., Chattanooga.
 McManus, Dr. W. F., * 826 Market St., Chattanooga.
 McWhorter, Dr. L. B., * 711½ Market St., Chattanooga.
 Meacham, Dr. M. A., Loveman Bldg., Chattanooga.
 Minter, Dr. N. J., 272½ East Main St., Chattanooga.
 Morris, Dr. Dowling C., cor. Main and Market Sts., Chattanooga.
 Murphy, Dr. J. H., * Idaho.
 Neffe, Dr. A. A., Lookout Mountain.
 Newell, Dr. E. D., 707 Georgia Ave., Chattanooga.
 Newell, Dr. E. T., 707 Georgia Ave., Chattanooga.
 Null, Dr. H. O., Ridgedale.
 Partridge, Dr. Jas., Keystone Bldg., Chattanooga.
 Rathmell, Dr. J. R., 5 East Ninth St., Chattanooga.
 Reisman, Dr. E. E., Loveman Bldg., Chattanooga.
 Richard, Dr. J. M., * Sale Creek.
 Richardson, Dr. R. M., care Erlanger Hospital, Chattanooga.
 Ritchey, Dr. N. S., * Daisy.
 Shepard, Dr. J. T., Loveman Bldg., Chattanooga.
 Shoff, Dr. J. S., * 1015 East Eleventh St., Chattanooga.
 Sims, Dr. P. D., 708 Walnut St., Chattanooga.
 Smith, Dr. H. G., Jr., & Passaic Gen'l Hos., Passaic, New Jersey.
 Smith, Dr. F. T., * 826 Market St., Chattanooga.
 Stapp, Dr. F. B., 9½ East Eighth St., Chattanooga.
 Steele, Dr. J. B., * 9½ East Eighth St., Chattanooga.
 Steele, Dr. N. C., Loveman Bldg., Chattanooga.
 Stem, Dr. L. T., East Lake.
 Stuart, Dr. M. H., * Loveman Bldg., Chattanooga.
 Sutton, Dr. J. Q., * 705½ Market St., Chattanooga.
 Tatum, Dr. R. H., 826 Market St., Chattanooga.
 Taylor, Dr. R. N., * 707½ Market St., Chattanooga.
 Travis, Dr. B. F., * James Bldg., Chattanooga.
 Wagner, Dr. M. M., Guild.
 Waite, Dr. N. M., 114½ E. Seventh St., Chattanooga.
 Wallace, Dr. Raymond, "The Elizabeth," Chattanooga.
 Webb, Dr. J. M., * Ooltewah.
 Wert, Dr. B. S., 5 East Eighth St., Chattanooga.
 West, Dr. Geo. R., 10 West Eighth St., Chattanooga.
 Williams, Dr. G. V., 222½ E. Main St., Chattanooga.
 Wilson, Dr. H. B., James Bldg., Chattanooga.
 Wise, Dr. E. B., over 739 Market St., Chattanooga.
 Woolner, Dr. A. B., 5 East Ninth St., Chattanooga.
 Wood, Dr. Frank L., 222½ E. Main St., Chattanooga.
 Woodruff, Dr. A. B., 313 Chamberlain, Chattanooga.
 Woolford, Dr. J. S. B., 313 Chamberlain, Chattanooga.
 Wunschow, Dr. Otto B., * 829 Market St., Chattanooga.
 Wylie, Dr. C. B., Cleveland.
 Yarnell, Dr. S. I., Pres., Loveman Bldg., Chattanooga.
 Zelgler, Dr. T. J., East Chattanooga.

HAMBLETON COUNTY.

Bales, Dr. T. E., Morristown.
 Campbell, Dr. J. F., Morristown.
 Cass, Dr. H. M., President, Morristown.
 Davis, Dr. J. P., Morristown.
 Dice, Dr. J. B. F., Morristown.
 Elam, Dr. K. P., Bates Springs.
 Henderson, Dr. P. L., Morristown.
 Howell, Dr. W. E., Morristown.
 Manard, Dr. J. J., Morristown.
 Manker, Dr. R. A., Whitesburg.
 Milligan, Dr. L. H., Morristown.
 Painter, Dr. E. F., Morristown.
 Pangle, Dr. H. G., Russellville.
 Ruble, Dr. W. G., Secretary, Morristown.
 Shields, Dr. D. E., Morristown.
 Tidwell, Dr. R. S., Bates Springs.
 Tomlinson, Dr. O. R., Bates Springs.
 Walker, Dr. I. D., Alpha.
 Weesner, Dr. B. C., Morristown.
 Woods, Dr. J. O., Morristown.

HARDEMAN COUNTY.

Clifton, Dr. Joe, Hickory Valley.
 Cock, Dr. W. S., Bolivar.
 Curry, Dr. G. B., Toone.

Curry, Dr. J. M., Toone.
 Dorris, Dr. H. E., Bolivar.
 Goodard, Dr. W. L., Saulsberry.
 Johnston, Dr. J. C., LaGrange.
 Milstead, Dr. H. M., Bolivar.
 Neeley, Dr. J. J., Bolivar.
 Sasser, Dr. J. D., Sr., President, Middleton.
 Tate, Dr. Robt. W., Secretary, Bolivar.

HAYWOOD COUNTY.

Allen, Dr. John S., Brownsville.
 Cooper, Dr. Thos. W., Brownsville.
 Dickerson, Dr. R. C., Brownsville.
 Edwards, Dr. Jas. L., Secretary, Brownsville.
 Heard, Dr. F. C., Brownsville.
 Mulherson, Dr. G. G., Brownsville.
 Mulherson, Dr. Earl, Brownsville.
 Norville, Dr. J. Conyers, Hanley.
 Patton, Dr. J. S., Brownsville.
 Poston, Dr. W. D., Brownsville.
 Seyler, Dr. J. H., Brownsville.
 Sorrell, Dr. A. H., Brownsville.
 Seymour, Dr. J. T., Eureka-ton.
 Whitelaw, Dr. W. H., President, Brownsville.
 Wilkerson, Dr. J. B., Stanton.
 Warren, Dr. J. W., Halls.

HENDERSON COUNTY.

Arnold, Dr. J. M., Lexington.
 England, Dr. J. H., Luray.
 Hendrix, Dr. J. W., Darden.
 Howell, Dr. W. I., Darden.
 Huntsman, Dr. W. F., Juno.
 Johnston, Dr. C. H., Secretary, Lexington.
 Keeton, Dr. W. B., Scotts Hill.
 Stinson, Dr. J. C., Center Point.
 Watson, Dr. W. S., Lexington.
 Wyley, Dr. R. L., Scotts Hill.
 Howard, Dr. J. H., * President, Lexington.

HENRY COUNTY.

Abernathy, Dr. G. T., Paris.
 Davis, Dr. E. A., Paris.
 Grainger, Dr. R. A., Paris.
 McSwain, Dr. I. A., Paris.
 McSwain, Dr. J. H., Secretary, Paris.
 Perry, Dr. R. J., Springville.
 Paschal, Dr. A. F., Crossland, Ky.
 Rodgers, Dr. C. W., Como.
 Travis, Dr. E. A., President, Como.

HICKMAN COUNTY.

Beasley, Dr. J. S., Secretary, Centerville.
 Beasley, Dr. R. P., * Bold Springs.
 Batton, Dr. J. A., Coblé.
 Cooper, Dr. J. D., Sunrise.
 Flowers, Dr. D. W., Little Lot.
 Stephenson, Dr. C. V., Centerville.
 Springer, Dr. G. N., Hohenwald.
 Sutton, Dr. K. L., President, Centerville.
 Thompson, Dr. T. D., * Pinewood.
 Thompson, Dr. J. W., * Centerville.
 Wilson, Dr. R. P., * Centerville.
 Wood, Dr. J. E., * Kimmins.
 Webb, Dr. J. B., Goodrich.
 Norris, Dr. A., * Centerville.

HUMPHREYS COUNTY.

Binkley, Dr. D. C. K., Denver, R. F. D.
 Coke, Dr. T. H., Denver, R. F. D.
 Cooley, Dr. J. T., Secretary, Waverly, R. F. D. No. 3.
 Daniel, Dr. W. H., McEwen.
 Gould, Dr. H. F., President, Denver.
 Horner, Dr. W. R., Waverly, R. F. D. No. 2.
 Slayden, Dr. W. W., Waverly.
 Sugg, Dr. J. A., McEwen.
 Smith, Dr. J. N., Cuba Landing.
 Teas, Dr. J. J., Waverly.

JACKSON COUNTY.

Baugh, Dr. H. L., Flynns Lick.
 Condit, Dr. J. T., Gainesboro, R. R. No. 4.
 Fowler, Dr. S. B., Gainesboro.
 Hix, Dr. J. B., Secretary, Flynns Lick.
 Jones, Dr. T. H., Whitleyville, R. R. No. 2.
 Loftis, Dr. H. P., Gainesboro.
 Mabry, Dr. E. W., Meigs-ville.
 McCoin, Dr. N. M., Gainesboro, R. F. D. No. 3.
 Quarles, Dr. J. D., Whitleyville.
 Reeves, Dr. C. E., President, Gainesboro.

JEFFERSON COUNTY.

Anderson, Dr. J. C., Dandridge.
 Brown, Dr. B. F.,* Jefferson City.
 Cline, Dr. Phillip L.,* White Pine.
 Cline, Dr. Ben E., Strawberry Plains.
 Caldwell, Dr. J. M.,* Dandridge.
 Cooper, Dr. W. S.,* White Pine.
 Dukes, Dr. N. M., Secretary, Strawberry Plains.
 Fain, Dr. W. S.,* Dandridge.
 French, Dr. T. R., Dandridge.
 Ferguson, Dr. M. W., Dandridge.
 Huggins, Dr. J. I., Dandridge.
 King, Dr. W. F.,* Jefferson City.
 Rainwater, Dr. Perry,* Dandridge.
 Roberts, Dr. W. E., Talbots.
 Tadlock, Dr. W. L., Talbots.
 Tittsworth, Dr. B. M., President, Jefferson City.
 Tinsley, Dr. P. A., Dandridge.
 Tarr, H. L., Jefferson City.
 Walker, Dr. J. H., White Pine.
 Waggoner, Dr. P. L.,* Dandridge.

KNOX COUNTY.

Acuff, Dr. S. D., 1314 N. Central, Knoxville.
 Atchley, Dr. P.,* Empire Bldg., Knoxville.
 Armstrong, Dr. W. H., Rogersville.
 Austin, Dr. W. S., 423 W. Church, Knoxville.
 Alexander, Dr. Eben, Oxford Hotel, Knoxville.
 Booker, Dr. G. W., W. Church Ave., Knoxville.
 Blankenship, Dr. J. P. (Blount Co.), Maryville.
 Bosworth, Dr. B. D., W. Church Ave., Knoxville.
 Boyd, Dr. S. B., cor. Prince and Cumberland, Knoxville.
 Brown, Dr. John R., Lyons View.
 Bowen, Dr. Wm., French & Roberts Bldg., Knoxville.
 Bonner, Dr. F. H.,* Walnut St., Knoxville.
 Campbell, Dr. Michael, Lyons View.
 Capps, Dr. C. M.,* Deaderick Bldg., Knoxville.
 Carmichael, Dr. C. J.,* 612 Walnut St., Knoxville.
 Carmichael, Dr. J. W., 612 Walnut St., Knoxville.
 Casenbury, Dr. S. E.,* McTownlee Bldg., Knoxville.
 Cates, Dr. B. B.,* 508 W. Clinch St., Knoxville.
 Cochran, Dr. W. R., 721 Walnut St., Knoxville.
 Copenhaver, Dr. M. M., Lonsdale.
 Christenberg, Dr., Lonsdale.
 Dall, Dr. V. C., Arnstein Bldg., Knoxville.
 Davis, Dr. C. H., Empire Bldg., Knoxville.
 Deaderick, Dr. C., 501 W. Church Ave., Knoxville.
 DeArmond, Dr. C. C., Empire Bldg., Knoxville.
 Delpuech, Dr. Wm., 434 Atkins, Knoxville.
 Drake, Dr. C. M., 410 W. Church Ave., Knoxville.
 Donohue, Dr. R. E., Walnut St., Knoxville.
 Frasier, Dr. B. H.,* Sewanee.
 Fitzgerald, Dr. T. F., Knoxville, R. F. D. No. 1.
 Goetz, Dr. H. E.,* Deaderick Bldg., Knoxville.
 Greer, Dr. W. A.,* Deaderick Bldg., Knoxville.
 Guynes, Dr. E. A.,* French & Roberts Bldg., Knoxville.
 Hall, Dr. G. M., McTownlee Bldg., Knoxville.
 Hodge, Dr. S. H.,* 611 Walnut St., Knoxville.
 Holloway, Dr. V. D., 609 Walnut St., Knoxville.
 Hams, Dr. H. A.,* McTownlee Bldg., Knoxville.
 Jones, Dr. S. L., Deaderick Bldg., Knoxville.
 Jones, Dr. T. R., 605 Walnut St., Knoxville.
 Johnson, Dr. J. B.,* Knox. Gen. Hosp., Knoxville.
 Kelso, Dr. H. J., 425 W. Church Ave., Knoxville.
 Kabler, Dr. W. F.,* 605 Walnut St., Knoxville.
 Kennedy, Dr. J. M.,* W. Central Ave., Knoxville.
 Kern, Dr. A. G.,* 607 Walnut, Knoxville.
 Kincald, Dr. J. H., 421 W. Church Ave., Knoxville.
 Kyle, Dr. A. G., Deaderick Bldg., Knoxville.
 Layman, Dr. R. B.,* Whitfield Flats, Knoxville.
 Lones, Dr. C. E.,* 504 Asylum, Knoxville.
 Luttrell, Dr. Walter,* McTownlee Bldg., Knoxville.
 McCaile, Dr. W. A.,* Whitfield Flats, Knoxville.
 McCampbell, Dr. H. H., 614 Walnut St., Knoxville.
 McCown, Dr. R. M., W. Church Ave., Knoxville.
 McCulloch, Dr. J. A., Maryville.
 McNabb, Dr. C. P., 904 S. Gay St., Knoxville.
 Massey, Dr. John F.,* Empire Bldg., Knoxville.
 Miller, Dr. J. E., Rogersville.
 Miller, Dr. S. M., 209 W. Church Ave., Knoxville.
 Miller, Dr. S. R., 406 W. Church, Knoxville.
 Mooney, Dr. C. F., 705 Prince St., Knoxville.
 Nash, Dr. W. S.,* 611 Walnut St., Knoxville.
 Newman, Dr. R. H., 406 W. Church Ave., Knoxville.
 Ogle, Dr. W. S.,* Empire Bldg., Knoxville.
 Oppenheimer, Dr. R. P.,* 417 W. Church Ave., Knoxville.
 Parker, Dr. H. B.,* Inskip.
 Rain, Dr. C. W.,* Empire Bldg., Knoxville.
 Richmond, Dr. W. D., Empire Bldg., Knoxville.

Ristline, Dr. C. E., McNutt Bldg., Knoxville.
 Rule, Dr. A. L., W. Church Ave., Knoxville.
 Sherman, Dr. J. N., McTownlee Bldg., Knoxville.
 Sheddin, Dr. L. L., Sec., 419 W. Church Ave., Knoxville.
 Sisk, Dr. J. A., Empire Bldg., Knoxville.
 St. John, Dr. Geo. F.,* Petros.
 Staley, Dr. Thos. F.,* Bristol.
 Swaney, Dr. O. M., Treadway.
 Tillery, Dr. J. P., Pres., 419 W. Church Ave., Knoxville.
 Tillery, Dr. R. M., Empire Bldg., Knoxville.
 Vance, Dr. W. K., Bristol.
 Wallace, Dr. W. L., 1021 Broadway, Knoxville.
 West, Dr. J. Q. A.,* Arnstein Bldg., Knoxville.
 West, Dr. W. J.,* Empire Bldg., Knoxville.
 White, Dr. W. H. L., Young Bldg., Knoxville.
 Wilder, Dr. Dora L., Boyd's Ferry Roads, Knoxville.
 Williams, Dr. D. H.,* 613 Walnut St., Knoxville.
 Young, Dr. T. F.,* Young Bldg., Knoxville.
 Zemp, Dr. E. R., 617 Walnut St., Knoxville.

LAKE COUNTY.

Alexander, Dr. J. D., Secretary, Tiptonville.
 Alexander, Dr. W. S., Ridgely.
 Griffin, Dr. J. F., Tiptonville.
 Griffin, Dr. R. W., Tiptonville.
 Griffin, Dr. R. B., Ridgely.
 Hutchinson, Dr. J. L., Dublin.
 Hellen, Dr. R. R., Ridgely.
 Keltz, Dr. E. T., Cronanville.
 Smith, Dr. A. P., Ridgely.
 Wright, Dr. J. M., President, Tiptonville.

LAUDERDALE COUNTY.

Lackey, Dr. W. K., Ripley.
 Lackey, Dr. J. H., Ripley.
 Lusk, Dr. G. A., Ripley.
 Lewis, Dr. J. R., Ripley.
 Miller, Dr. W. D., Ripley.
 Mulherron, Dr. G. G., Ripley.
 Mulherron, Dr. E. R., Ripley.
 Miller, Dr. T. E., Ripley.
 Millen, Dr. W. P., Halls.
 Massingill, Dr. A. P., Halls.
 Porter, Dr. J. A., Ripley.
 Sanford, Dr. J. W., Ripley.
 Scott, Dr. G. T., Curve.
 Summers, Dr. W. L., Ripley.
 Walker, Dr. C. B., Ripley.

LINCOLN COUNTY.

Anderson, Dr. J. M., Fayetteville.
 Ashley, Dr. T. E., Fayetteville, R. F. D.
 Blair, Dr. E. K., Fayetteville.
 Brock, Dr. B. B., Blanche.
 Cannon, Dr. W. F., Belleville.
 Carroll, Dr. J. D., Fayetteville.
 Cullum, J. M., Secretary, Fayetteville.
 Farrar, Dr. J. P., Molino.
 Forbes, Dr. E. C., Howell.
 Gilliam, Dr. L. H., Kelso.
 Goodner, Dr. D. M., Fayetteville.
 Goodrich, Dr. C. L., Fayetteville.
 Graham, Dr. J. T., Booneville.
 Hardin, Dr. D. T., Blanche.
 Holland, Dr. E. F., Mulberry.
 Jean, Dr. B. L., Deltrose.
 Joplin, Dr. W. S., Petersburg.
 McRady, Dr. S. F., Petersburg.
 McWilliams, Dr. J. M., Fayetteville.
 Nobblitt, Dr. B. E., Fayetteville.
 Patrick, Dr. T. A., Fayetteville.
 Sloan, Dr. J. F., Cryston.
 Shelton, Dr. J. M., Smithland.
 Summers, Dr. W. P., President, Harms.
 Wyatt, Dr. J. M., Molino.
 Yearwood, Dr. A. L., Fayetteville.

LOUDON COUNTY.

Burdett, Dr. G. M., Lenoir City.
 Eblen, Dr. J. G., Lenoir City.
 Fout, Dr. W. F., President, Lenoir City.
 Harrison, Dr. J. J., Loudon.
 Hickman, Dr. T. J., Secretary, Lenoir.
 Leiper, Dr. J. T., Lenoir.
 Pagett, Dr. W. D., Lenoir.

MAURY COUNTY.

Anderson, Dr. H. O.,* Williamsport.
 Beasley, Dr. M. A., President, Hampshire.
 Biddle, Dr. P. D.,* Columbia.
 Brown, Dr. T. B., Columbia.
 Church, Dr. R. M., Columbia.
 Clark, Dr. C. Y.,* Mt. Pleasant.
 Collin, Dr. E. E., Columbia.
 Cook, Dr. M. M., Secretary, Santa Fe.
 Edwards, Dr. J. A., Columbia.
 Forgey, Dr. C. A.,* Columbia.
 Hardin, Dr. J. O. (Vet.), Spring Hill.
 Hardison, Dr. T. J.,* Carters Creek.
 Harrison, Dr. W. B. (Vet.), Columbia.
 Haywood, Dr. J. L., Carters Creek.
 Hill, Dr. J. S.,* Mt. Pleasant.
 Kirtrell, Dr. W. H., Mt. Pleasant.
 Perry, Dr. R. S., Columbia.
 Pillow, Dr. Robt.,* Columbia.
 Porter, Dr. O. J., Columbia.
 Ragsdale, Dr. L. E., Williamsport.
 Thomas, Dr. H. E., Columbia.
 Timmons, Dr. E. A., Columbia.
 Webb, Dr. W. R., Hampshire.
 Wilkes, Dr. J. H. (Vet.), Hampshire.
 Williamson, Dr. J. G., Sr., Hampshire.
 Williamson, Dr. J. G., Jr., Hampshire.

MADISON COUNTY.

Arnold, Dr. J. M., Jackson.
 Barbee, Dr. J. T., Jackson.
 Blackmon, Dr. J. A., Jackson.
 Cartmell, Dr. J. H., Jackson.
 Crook, Dr. Jere L., Jackson.
 Crook, Dr. Jas. A., Jackson.
 Dancy, Dr. Alex. B., Jackson.
 Drake, Dr. Clifford C., Jackson.
 Duckworth, Dr. W. C., Jackson.
 Greer, Dr. Robt. L., Norwood.
 Gresham, Dr. J. W., Jackson.
 Hamilton, Dr. Frank B., Jackson.
 Hamilton, Dr. F. B., Jr., Jackson.
 Hawkins, Dr. Herman, Jackson.
 Henderson, Dr. Sam A., Jackson.
 Herron, Dr. J. T., President, Jackson.
 Hopper, Dr. Jeff D., Jackson.
 Hudson, Dr. D. A.,* Malesus.
 Jones, Dr. H. L.,* Jackson.
 Jones, Dr. Jas. T., Jackson.
 Lacy, Dr. Geo.,* Medon.
 Lockman, Dr. W. L., Medon.
 Lusk, Dr. P. B., Jackson.
 McCoy, Dr. Ambrose, Jackson.
 McNeil, Dr. E. K., Secretary, Jackson.
 Nelson, Dr. R. B., Jackson.
 Raines, Dr. J. T., Malesus.
 Raines, Dr. J. T., Jr., Malesus.
 Rochelle, Dr. W. F., Jackson.
 Sanders, Dr. W. G., Jackson.
 Siler, Dr. M. E.,* Mercer, R. F. D., No. 2.
 Troutt, Dr. J. M., Jackson.
 Webb, Dr. Lorenza L., Carroll.
 Williamson, Dr. L. G., Jackson.

MARSHALL COUNTY.

Baxter, Dr. R. G., Caney Spring.
 Crunk, Dr. J. C., Luna.
 Dryden, Dr. D. M., Petersburg.
 Gault, Dr. F. H., Cornersville.
 Jones, Dr. Alf., Cornersville.
 Hardison, Dr. S. T., Lewisburg.
 Hardison, Dr. C. C., Lewisburg.
 Hardison, Dr. J. A., President, Lewisburg.
 Logan, Dr. T. A., Lewisburg.
 Moffitt, Dr. S. A., Mooresville.
 Ransom, Dr. W. C., Farmington.
 Reed, Dr. T. E., Secretary, Lewisburg.
 Vaden, Dr. W. E., Rich Creek.
 White, Dr. Buford, Lewisburg.
 White, Dr. Garrett, Chapel Hill.
 Womack, Dr. C. W., Lewisburg.

McNAIRY COUNTY.

Bell, Dr. W. T., Secretary, Selmer.
 Dodds, Dr. B. C., Gravelhill.
 Hodges, Dr. W. H., Finger.
 Kendrick, Dr. R. M., Selmer.
 Key, Dr. M. C., Ramer.

Sanders, Dr. E. G., Stantonville.
 Sanders, Dr. H. C., Lanton.
 Smith, Dr. J. L., Selmer.
 Smith, Dr. J. R., Selmer.

MONROE COUNTY.

Bagwell, Dr. B. W., Madisonville.
 Barnes, Dr. L. L., Vonore.
 Berry, Dr. F. K., Sweetwater.
 Blecknell, Dr. G. O., Etowah.
 Brock, Dr. R. A., Sweetwater.
 Davis, Dr. J. E., Secretary, Sweetwater.
 Hardin, Dr. J. A., Sweetwater.
 Kimbrough, Dr. R. C., Madisonville.
 Leonard, Dr. W. W.,* Mt. Vernon.
 McClain, Dr. W. A., Sweetwater.
 McCollum, Dr. J. A., Tariffville.
 Nichols, Dr. J. O., Etowah.
 Penland, Dr. S. N., Madisonville.
 Roberts, Dr. P. M., President, Sweetwater.

MONTGOMERY COUNTY.

Brandon, Dr. J. W., Clarksville.
 Ferguson, Dr. R. F., Clarksville.
 Hughes, Dr. M. L., Clarksville.
 Johnson, Dr. T. D., Clarksville.
 Macon, Dr. M. L., Clarksville.
 Marable, Dr. T. H., Clarksville.
 McFall, Dr. R. J., Cumberland City.
 Neblett, Dr. L. L., President, Stayton.
 Neblett, Dr. S. E., South Side.
 Nesbitt, Dr. H. A., McAllisters X Roads.
 Runyon, Dr. F. J., Clarksville.
 Slayden, Dr. T. J., St. Bethlehem.
 Vaughan, Dr. G. E., Secretary, Clarksville.
 Webb, Dr. L. E., St. Bethlehem.
 Webb, Dr. Roy, St. Bethlehem.

MORGAN COUNTY.

Cooper, Dr. J. L., Oakdale.
 Jones, Dr. S. H., Secretary, Sunbright.
 Todd, Dr. G. R., Wartburg.
 Wiltsie, Dr. A. L., President, Lancing.

OBION COUNTY.

Blanton, Dr. M. A., Secretary, Union City.
 Butler, Dr. H. T., Union City.
 Capps, Dr. J. M., Kenton.
 Callicutt, Dr. T. P.,* Rives.
 Chandler, Dr. S. E., Minnick.
 Darnell, Dr. Jas. F., President, Obion.
 Edwards, Dr. T. D.,* Union City.
 Glover, Dr. Har. Troy.
 Havener, Dr. J. B.,* Troy.
 Howard, Dr. J. A.,* McConnell.
 Jernigan, Dr. V. J., Obion.
 Matlock, Dr. P. N., Mason Hall.
 Marshall, Dr. T. E.,* Union City.
 Marshall, Dr. C. C.,* Hornbeak.
 Pearce, Dr. D. M.,* Union City.
 Phelps, Dr. J. A.,* Jordan, Ky.
 Prather, Dr. D. J., Union City.
 Prather, Dr. P. W., Woodland Mills.
 Pressley, Dr. W. C.,* Troy.
 Roberts, Dr. W. F., Troy.
 Roper, Dr. J. F., Union City.
 Sharp, Dr. J. B., Obion.
 Watson, Dr. F. W., Union City.
 Wells, Dr. J. J.,* Glass.
 White, Dr. E. H., Rives.
 Wright, Dr. J. L., Elbridge.

OVERTON COUNTY.

Breeding, Dr. W. M., Livingston.
 Capps, Dr. M. B., President, Livingston.
 Capps, Dr. J. D.,* Livingston.
 Landsen, Dr. J. B.,* Livingston.
 McDonald, Dr. J. T.,* Nettle Carrier.
 Qualls, Dr. A. B.,* Livingston.
 Reed, Dr. W. A., Secretary, Livingston.
 Wells, Dr. M. H., Hildham.

POLK COUNTY.

Akin, Dr. E. M., President, Copperhill.
 Copeland, Dr. W. J., Fetzerton.

Geisler, Dr. F. O., Isabella.
Hyder, Dr. R. L., Isabella.
Kinsey, Dr. F. M., Ducktown.
Kinsey, Dr. L. E., Secretary, Ducktown.
Lewis, Dr. A. W., Copperhill.
Rogers, Dr. K. E., Ducktown.

PUTNAM COUNTY.

Curtis, Dr. H. C., Algood.
Davis, Dr. S. D.,* Cookeville.
Denton, Dr. Samuel, Buffalo Valley.
Dyer, Dr. J. F.,* Cookeville.
Dyer, Dr. Lex, Secretary, Cookeville.
Ensor, Dr. L. D. J., Cookeville.
Farmer, Dr. W. S., Cookeville.
Freeman, Dr. L. M.,* Granville.
Howard, Dr. W. A., Algood.
Martin, Dr. J. B. S., President, Cookeville.
Martin, Dr. H. C.,* Cookeville.
Martin, Dr. C. P.,* Cookeville.
Moore, Dr. J. T., Algood.
Officer, Dr. W. C.,* Monterey.
Ray, Dr. R. L., Monterey.
Shipley, Dr. Z. L., Cookeville.
Sypert, Dr. W. E.,* Baxter.
Trapp, Dr. J. S.,* Sparta, R. F. D. No. 8.
White, Dr. W. A., Wilder.

ROANE COUNTY.

Clack, Dr. J. M., Rockwood.
Clack, Dr. Walter S., Rockwood.
Dodson, Dr. E. F., Harriman.
Givan, Dr. G. C. G., Secretary, Harriman.
Goodwin, Dr. J. B., Harriman.
Green, Dr. C. W., Harriman.
Hill, Dr. W. W., President, Cardiff.
Kimbrough, Dr. R. M., Harriman.
Nelson, Dr. J. E., Rockwood.
Phillips, Dr. E. S., Rockwood.
Roberts, Dr. John, Kingston.
Sewell, Dr. J. A., Rockwood.
Waller, Dr. J. J., Oliver Springs.
Wilson, Dr. J. C., Rockwood.
Zirkle, Dr. G. P., Kingston.

RHEA COUNTY.

Clark, Dr. J. M., Spring City.
Donaldson, Dr. Samuel, Dayton.
Gillespie, Dr. J. R., Dayton.
Hammock, Dr. J. W., Graysville.
Lovell, Dr. Arthur I., Graysville.
McDonald, Dr. W. P., Spring City.
McKenzie, Dr. J. L., Graysville.
Miller, Dr. R. C., Secretary, Evensville.
Thomason, Dr. J. G., Dayton.
Thomson, Dr. W. F., Dayton.
Watkins, Dr. R. K., President, Spring City.
Williams, Dr. W. B., Dayton.
Yancey, Dr. S. M., Dayton, R. F. D. No. 4.

RUTHERFORD COUNTY.

Bilbro, Dr. W. C., Murfreesboro.
Chadwick, Dr. W. E., Murfreesboro.
Crosthwaite, Dr. G. W., Florence.
Duggan, Dr. S. S., Eagleville.
Earthman, Dr. V. K.,* Murfreesboro.
Engles, Dr. W. J.,* Smyrna.
Griggs, Dr. S. C., Murfreesboro.
Huff, Dr. D. C., Christiana.
Jamison, Dr. A. J.,* President, Murfreesboro.
Jones, Dr. E. H., Murfreesboro.
Kelton, Dr. Jas. C., Lascassas.
Murfree, Dr. J. B. (Vet.), Murfreesboro.
Murfree, Dr. M. B.,* Murfreesboro.
Overall, Dr. J. C., Lascassas.
Pitts, Dr. Rufus, Secretary, Murfreesboro.
Read, Dr. R. W., Murfreesboro.
Rees, Dr. H. C.,* Murfreesboro.
Rucker, Dr. J. J.,* Murfreesboro.
Smith, Dr. S. B., Overall.
Youree, Dr. W. E.,* Readyville.

ROBERTSON COUNTY.

Bradley, Dr. M. L.,* Sadlersville.
Brown, Dr. T. L. B., White House, R. F. D. No. 1.
Connell, Dr. J. R., Adams.

Covington, Dr. J. J.,* Cross Plains.
Davis, Dr. Duncan E., Springfield.
Fyke, Dr. B. F., Secretary, Springfield.
Green, Dr. J. R.,* Springfield.
Hassell, Dr. T. H., Springfield.
Henry, Dr. W. T., Springfield.
Johnson, Dr. T. L., Greenbrier.
Jones, Dr. G. R., Orlinda.
Matthews, Dr. R. L., Springfield.
Moore, Dr. J. E.,* Springfield.
Moore, Dr. A. C.,* Springfield.
Pitt, Dr. P. L., Greenbrier.
Porter, Dr. W. W., Springfield.
Ramer, Dr. D. W., Springfield, R. F. D. No. 3.
Reeves, Dr. John H.,* Springfield, R. F. D. No. 1.
Royster, Dr. Wm.,* Cedar Hill, R. F. D. No. 5.
Scott, Dr. Miles, Springfield, R. F. D. No. 9.
Sory, Dr. Bailey B.,* Cedar Hill.
Sory, Dr. L. F., Adams.
Walton, Dr. L. B.,* White House.
Woodard, Dr. F. M., President, Springfield.
Woodruff, Dr. J. B.,* Springfield, R. F. D. No. 8.
Wells, Dr. I. E.,* Springfield, R. F. D. No. 6.
Winters, Dr. W. W., Greenbrier.
Willett, Dr. W. H.,* Adams.

SCOTT COUNTY.

Baird, Dr. A. A., Hellenwood.
Boyatt, Dr. F. M., Onelda.
Carr, Dr. H. M.,* Glen Mary.
Foster, Dr. J. I., Huntsville.
McGill, Dr. T. M., Norma.
Phillips, Dr. T. L., President, Nunland.
Shields, Dr. J. A. P., Secretary, Norma.
Thompson, Dr. M. E., Almy.

SEVIER COUNTY.

Catlett, Dr. W. A., Sevierville.
Flannagin, Dr. S. W., Sevierville.
Huffaker, Dr. J. R., Sevierville.
Ingle, Dr. R. J., Secretary, Sevierville.
Isham, Dr. A. J., Sevierville.
Sharp, Dr. G. E., Trundle's X Roads.
Walker, Dr. P. E., President, Sevierville.
Yarberry, Dr. J. L., Sevierville.

SHELBY COUNTY.

Armistead, Dr. H. S., 773 Dutro Pl., Memphis.
Anderson, Dr. W. S., Memphis Trust Bldg., Memphis.
Andrews, Dr. J. L., Rogers Bldg., Memphis.
Ayres, Dr. J. C., 2158 Union Ave., Memphis.
Baldwin, Dr. W. H., Station G., Memphis.
Barton, Dr. J. L., 78 S. Main, Memphis.
Bearden, Dr. M. L.,* 1091 Greenwood, Memphis.
Binson, Dr. S. N.,* 201 S. Cooper, Memphis.
Beaty, Dr. H. W.,* Station C., Memphis.
Bell, Dr. John C., 534 N. 2nd St., Memphis.
Berry, Dr. H. L.,* Randolph Bldg., Memphis.
Black, Dr. W. T., Randolph Bldg., Memphis.
Blackburn, Dr. E. C., Pres., Randolph Bldg., Memphis.
Braun, Dr. W. T., 78 N. Main St., Memphis.
Brevard, Dr. S. A.,* 505 Alabama, Memphis.
Bridger, Dr. J. D., Memphis Trust Bldg., Memphis.
Bridgeforth, Dr. D. O., Lee Bldg., Memphis.
Buford, Dr. G. C.,* Randolph Bldg., Memphis.
Bums, Dr. W. B., Porter Bldg., Memphis.
Beck, Dr. C. M., Coahoma, Miss.
Beauchamp, Dr. J. L., 614 N. 7th, Memphis.
Bingham, Dr. W. M.,* Kerrville.
Branch, Dr. B. L.,* Collersville.
Campbell, Dr. S. S.,* 629 Monroe St., Memphis.
Campbell, Dr. W. C., Randolph Bldg., Memphis.
Carter, Dr. J. H., Tenn. Trust Bldg., Memphis.
Castles, Dr. W. S. A., 63½ N. Main St., Memphis.
Chaffee, Dr. F. R., Lucy, Tenn.
Clark, Dr. J. C.,* Goodwyn Inst., Memphis.
Clary, Dr. W. F., Jr., 13 S. Main, Memphis.
Cochran, Dr. J. F., 579 5th St., Memphis.
Crisler, Dr. J. A., Room 114 Peabody Hotel, Memphis.
Crofford, Dr. T. J., 211 N. Third, Memphis.
Crutcher, Dr. J. R., Tenn. Trust Bldg., Memphis.
Cunningham, Dr. J. W., Randolph Bldg., Memphis.
Currie, Dr. J. A.,* Lee Bldg., Memphis.
Conley, Dr. H. P., Byrd Bldg., Memphis.
Cox, Dr. W. R.,* Tenn. Trust Bldg., Memphis.
Cooper, Dr. A. F.,* 878 Jackson, Memphis.
Cullings, Dr. J. J., St. Joseph Hosp., Memphis.
DeLoach, Dr. A. B., Scimitar Bldg., Memphis.
Dunavant, Dr. B. N.,* Sec., Rogers Bldg., Memphis.

- Duvall, Dr. C. E., 218 McLemore, Memphis.
 Dickson, Dr. Harry, 1047 Arkansas, Memphis.
 Edwards, Dr. C. W., 488 Laeale Ave., Memphis.
 Ellett, Dr. E. C., Randolph Bldg., Memphis.
 Erskine, Dr. Alex.,* Randolph Bldg., Memphis.
 Everett, Dr. H. B., Station C, Memphis.
 Flippin, Dr. P. J., Brunswick, R. F. D. No. 1.
 Farrington, Dr. P. M., Memphis Trust Bldg., Memphis.
 Farris, Dr. H. L., Randolph Bldg., Memphis.
 Flsher, Dr. J. E.,* Randolph Bldg., Memphis.
 Francis, Dr. E. E., 115 N. Main St., Memphis.
 Frost, Dr. I. N.,* Station C, Memphis.
 Fagin, Dr. Robt., Tenn. Trust Bldg., Memphis.
 Fontaine, Dr. B. W., Byrd Bldg., Memphis.
 French, Dr. J. E., Silver City, Miss.
 Goltman, Dr. M., Memphis Trust Bldg., Memphis.
 Graham, Dr. Frank, Goodwyn Inst., Memphis.
 Gray, Dr. Josh.,* Arlington, Tenn.
 Granberry, Dr. Roy,* Tenn. Trust Bldg. Memphis.
 Haase, Dr. M., Memphis Trust Bldg., Memphis.
 Ham, Dr. E. C., Randolph Bldg., Memphis.
 Haskell, Dr. L. W., Randolph Bldg., Memphis.
 Haynes, Dr. E. E., Randolph Bldg., Memphis.
 Hail, Dr. D. M., 13 S. Main St., Memphis.
 Henderson, Dr. R. G.,* Randolph Bldg., Memphis.
 Henning, Dr. D. M., 13 S. Main, Memphis.
 Henning, Dr. B. G., 13 S. Main, Memphis.
 Hudson, Dr. A. G., Raines, Tenn.
 Holder, Dr. E. M., Memphis Trust Bldg., Memphis.
 Hill, Dr. J. F., Tenn. Trust Bldg., Memphis.
 Huddleston, Dr. J. J.,* Ten. Trust Bldg., Memphis.
 Harwell, Dr. W. T., Brunswick.
 Holmes, Dr. J. B.,* 1686 Euclid Ave., Memphis.
 Jacobs, Dr. A. G.,* Scimitar Bldg., Memphis.
 Jelks, Dr. J. L., Tenn. Trust Bldg., Memphis.
 Jones, Dr. Frank, Tenn. Trust Bldg., Memphis.
 Jones, Dr. Heber, Tenn. Trust Bldg., Memphis.
 Jones, Dr. Kennedy, Tenn. Trust Bldg., Memphis.
 Johnson, Dr. J. E., Memphis Trust Bldg., Memphis.
 Jones, Dr. G. P., 218 McLemore, Memphis.
 Kane, Dr. Elizabeth, 11 S. Second, Memphis.
 Kincaid, H. B., Memphis Trust Bldg., Memphis.
 Lawhorn, Dr. C. C., 700 N. 7th, Memphis.
 Lawrence, Dr. W. S., Memphis Trust Bldg., Memphis.
 Leroy, Dr. Louis, Tenn. Trust Bldg., Memphis.
 Lewis, Dr. A. C., Goodwyn Inst., Memphis.
 Lipscomb, Dr. J. A., 63 N. Main, Memphis.
 Livermore, Dr. G. R., Tenn. Trust Bldg., Memphis.
 Leake, Dr. E. K., Colliersville.
 Malone, Dr. Battle, Rogers Bldg., Memphis.
 Malone, Dr. G. B., Randolph Bldg., Memphis.
 Mann, Dr. Robt.,* Goodwyn Inst., Memphis.
 Maury, Dr. J. M., Memphis Trust Bldg., Memphis.
 Maury, Dr. R. B.,* Memphis Trust Bldg., Memphis.
 McElroy, Dr. J. B., Porter Bldg., Memphis.
 McGehee, Dr. J. L., Porter Bldg., Memphis.
 McCown, Dr. O. S., Memphis Trust Bldg., Memphis.
 McKinney, Dr. Richmond, Memphis Trust Bldg., Memphis.
 Moss, Dr. J. T., Lee Bldg., Memphis.
 McLean, Dr. J. L.,* Tenn. Trust Bldg., Memphis.
 Mahon, Dr. E. C.,* Randolph Bldg., Memphis.
 Meyer, Dr. L. L., Memphis Trust Bldg., Memphis.
 Michie, Dr. W. T., Scimitar Bldg., Memphis.
 Minor, Dr. H. F., Randolph Bldg., Memphis.
 Minor, Dr. J. L., Randolph Bldg., Memphis.
 Mitchell, Dr. E. D.,* Randolph Bldg., Memphis.
 Mitchell, Dr. R. H., So. Express Bldg., Memphis.
 Moore, Dr. Alfred, Randolph Bldg., Memphis.
 Moore, Dr. Moore, Memphis Trust Bldg., Memphis.
 Morrow, Dr. C. S.,* Rogers Bldg., Memphis.
 Malone, Dr. F. M., Capleville, Tenn.
 Meeker, Dr. Sidney, 925 Roland, Memphis.
 Mitchell, Dr. E. C., Goodwyn Inst., Memphis.
 Oliver, Dr. A. B., Tenn. Trust Bldg., Memphis.
 Peete, Dr. E. M.,* Tenn. Trust Bldg., Memphis.
 Porter, Dr. A. R., Randolph Bldg., Memphis.
 Posert, Dr. Henry,* So. Express Bldg., Memphis.
 Pistole, Dr. W. H., Station C, Memphis.
 Price, Dr. J. W., Memphis Trust Bldg., Memphis.
 Pendergrast, Dr. L. H.,* Memphis Trust Bldg., Memphis.
 Pride, Dr. W. T., Memphis Trust Bldg., Memphis.
 Pettet, Dr. G. E., 958 S. Fourth, Memphis.
 Phillips, Dr. S. D.,* 1721 Nelson Ave., Memphis.
 Raines, Dr. N. F., Johnson Bldg., Memphis.
 Ray, Dr. W. D.,* 1361 Florida, Memphis.
 Raymond, Dr. F. S.,* 115 N. Main, Memphis.
 Reilly, Dr. J. H.,* Tenn. Trust Bldg., Memphis.
 Rogers, Dr. W. B., Rogers Bldg., Memphis.
 Rosamond, Dr. Eugene,* Byrd Bldg., Memphis.
 Rudisill, Dr. A. W., 1014 Patton, Memphis.
 Rucker, Dr. S. T., 935 Raleigh, Memphis.
 Ragsdale, Dr. W. E., 218 McLemore, Memphis.
 Smith, Dr. Jos. H.,* Lauderdale and Kerr, Memphis.
 Stanford, Dr. J. B., Lauderdale and Kerr, Memphis.
 Sibley, Dr. S. J., Tenn. Trust Bldg., Memphis.
 Sanford, Dr. H. B.,* 208 Poplar Ave., Memphis.
 Sanford, Dr. W. B.,* 208 Poplar Ave., Memphis.
 Sauls, Dr. D. K., 174 S. Main St., Memphis.
 Savage, Dr. G. H.,* Randolph Bldg., Memphis.
 Schultz, Dr. M. A., 40 W. Iowa, Memphis.
 Simpson, Dr. W. L., Randolph Bldg., Memphis.
 Sinclair, Dr. A. G., S. Express Bldg., Memphis.
 Smythe, Dr. F. D., Porter Bldg., Memphis.
 Smlth, Dr. W. H., 1306 Latham, Memphis.
 Stanley, Dr. J. B.,* Randolph Bldg., Memphis.
 Stewart, Dr. Geo. B.,* Station C, Memphis.
 Stewart, Dr. Walter,* So. Express Bldg., Memphis.
 Taylor, Dr. Nenmon,* Odd Fellows' Bldg., Memphis.
 Taylor, Dr. W. W., Randolph Bldg., Memphis.
 Terrell, Dr. S. D., 201 S. Cooper, Memphis.
 Thornton, Dr. G. B., 150 Court Ave., Memphis.
 Toombs, Dr. P. W., Tenn. Trust Bldg., Memphis.
 Turner, Dr. B. F., Odd Fellows' Bldg., Memphis.
 Underwood, Dr. R. B., Rogers Bldg., Memphis.
 Van Horn, Dr. J. A., 78 N. Main, Memphis.
 Vaughan, Dr. J. A., Goodwyn Inst., Memphis.
 Venn, Dr. J. H., Scimitar Bldg., Memphis.
 Wadley, Dr. S. L.,* 699 N. 2nd, Memphis.
 Wadlington, Dr. W. J., Randolph Bldg., Memphis.
 Wallace, Dr. W. R., 958 S. 4th, Memphis.
 Walton, Dr. J. M., 901 N. 3d St., Memphis.
 Watkins, Dr. E. I., Memphis Trust Bldg., Memphis.
 Watkins, Dr. H. C.,* Lee Bldg., Memphis.
 Webb, Dr. W. S., 521 S. Front, Memphis.
 White, Dr. C. A., Tenn. Trust Bldg., Memphis.
 White, Dr. R. L., 2109 Harbert, Memphis.
 Williams, Dr. A. R.,* Randolph Bldg., Memphis.
 Williams, Dr. Edwin,* Odd Fellows' Bldg., Memphis.
 Wolff, Dr. H. S., So. Express Bldg., Memphis.
- SUMNER COUNTY.
- Allen, Dr. W. T., Gallatin.
 Baker, Dr. J. C., Gallatin, R. F. D. No. 5.
 Carter, Dr. T. G., Westmoreland.
 Dorris, Dr. W. B., Gallatin, R. F. D.
 Dotson, Dr. Walter, President, Gallatin.
 Dunklin, Dr. F. H., Gallatin, R. F. D.
 Lackey, Dr. W. N., Gallatin.
 McNeil, Dr. J. H., Mitchellville.
 Parker, Dr. J. R., Gallatin.
 Peden, Dr. E. F., Portland.
 Reese, Dr. Homer, Secretary, Gallatin, R. F. D. No. 6.
 Venters, Dr. J. M., Portland.
 Walden, Dr. V. A., Bethpage, R. F. D.
 Woodson, Dr. L. M., Gallatin.
- SMITH COUNTY.
- Alexander, Dr. M. N.,* Pleasant Shade.
 Beasley, Dr. I. H., Dixon Springs.
 Beasley, Dr. J. J., President, Pleasant Shade.
 Boze, Dr. Floyd W.,* Elmwood.
 Bridges, Dr. J. G.,* New Middleton.
 Chism, Dr. J. H., Secretary, Carthage.
 Crockett, Dr. W. M.,* New Middleton.
 Davis, Dr. M. O.,* Carthage.
 Flsher, Dr. J. E.,* Rome.
 Fisher, Dr. J. N.,* Lancaster.
 Hargis, Dr. Frank, Chestnut Mound.
 High, Dr. B. J.,* Elmwood.
 Key, Dr. R. E., Monoville.
 King, Dr. R. W.,* Gordonsville.
 Robins, Dr. C. D.,* Gordonsville.
 Swope, Dr. Frank, Carthage.
- TIPTON COUNTY.
- Bentley, Dr. C. C., Quito.
 Blaydes, Dr. A. B., Atoka.
 Brown, Dr. G. B., Atoka.
 Cooper, Dr. B. H.,* Garland.
 Cooper, Dr. W. F.,* Atoka.
 Dickson, Dr. H. F., Covington.
 Dickson, Dr. B. V., Secretary, Covington.
 Edwards, Dr. J. G., Covington.
 Ellison, Dr. H. L.,* Reverie.
 Etheridge, Dr. J. W.,* Reverie.
 Fleming, Dr. J. J., Brighton.
 Gassaway, Dr. T. B.,* Covington.
 Gillespie, Dr. G. B., Covington.
 Herring, Dr. Edwin B., Mason.
 Hill, Dr. Lafayette, Jr., Covington.

Hurt, Dr. Sebastian, Brighton.
 Kelly, Dr. N. W., President, Covington.
 McBride, Dr. J. W., Covington.
 McLister, Dr. W. A. L., * Brighton.
 Newman, Dr. Nat. R., Bride.
 Rice, Dr. J. C., Braden.
 Roane, Dr. Holmes, Covington.
 Roby, Dr. A. J., Covington.
 Sale, Dr. H. W., Covington.
 Sanford, Dr. J. R., * Covington.
 Sullivan, Dr. H. N., Covington.
 Tarwater, Dr. E. A., Mason.
 Wilson, Dr. J. F., Burlison.
 Witherington, Dr. J. B., Munford.
 Witherington, Dr. A. S., Munford.
 Yarborough, Dr. L. A., Covington.
 Young, Dr. W. A., Atoka.

UNICOI COUNTY.

Carter, Dr. J. T., * Erwin.
 Edwards, Dr. C. P., Erwin.
 Harwell, Dr. E. B., Secretary, Unicoi.
 Hensley, Dr. T. C., Flag Pond.
 Tilson, Dr. L. S., President, Erwin.
 Williams, Dr. G. C., Erwin.
 Woodward, Dr. W. T., Erwin.

WARREN COUNTY.

Burger, Dr. T. O., Secretary, McMinnville.
 Cantrell, Dr. Q. C., McMinnville.
 Copenhagen, Dr. H. V., Rock Island, No. 1.
 Cummings, Dr. W. B. (Vet.), Rouland.
 Doyle, Dr. H. A., Morrison.
 Fisher, Dr. G. C., Dibrell.
 Gilbert, Dr. L. B., McMinnville.
 Mooneyham, Dr. E. L., Rock Island.
 Northcutt, Dr. E. E., President, McMinnville.
 Ransey, Dr. A. B., McMinnville.
 Seltz, Dr. Albert, McMinnville.
 Trall, Dr. A. J., McMinnville.
 Tubb, Dr. M. M., McMinnville, No. 5.

WASHINGTON COUNTY.

Arnold, Dr. J. F., Limestone.
 Broyles, Dr. C. F., Johnson City.
 Cox, Dr. J. W., Secretary, Johnson City.
 Dulaney, Dr. R. W., Jonesboro.
 Jones, Dr. J. H., Garbers.
 Kennedy, Dr. W. T., Johnson City.
 Long, Dr. E. A., Johnson City.
 Miller, Dr. E. S., Johnson City.
 Miller, Dr. H. D., Johnson City.
 Matthews, Dr. W. J., Johnson City.
 Panhorst, Dr. M. H., Jonesboro.
 Sells, Dr. G. J., Johnson City.
 Smith, Dr. C. E., Johnson City.
 Trigg, Dr. Daniel, Jr., Johnson City.
 Wallace, Dr. J. W., Watauga.
 West, Edwin T., President, Johnson City.

WEAKLEY COUNTY.

Barr, Dr. Hugh, President, Dresden.
 Biggs, Dr. V. A. A., Martin.
 Copeland, Dr. H. S., * President, Palmersville.
 Finch, Dr. J. B., Dresden.
 Jones, Dr. D. L., Dresden.
 Little, Dr. R. M., Dresden.
 Scates, Dr. D. W., Martin.
 Shannon, Dr. J. E., Sharon.
 Shannon, Dr. J. D., Greenfield.
 Young, Dr. J. C., Martin.

WHITE COUNTY.

Baker, Dr. R. F., Sparta.
 Breeding, Dr. W. J., Ravenscroft.
 Brock, Dr. W. L., Sparta.
 Cantrell, Dr. W. B., Cassville.
 Cotten, Dr. L. D., Sparta, No. 2.
 Earles, Dr. P. H., * Sparta, No. 3.
 Gaines, Dr. S. E., Sparta.
 Gist, Dr. D. R., Sparta.
 Gott, Dr. J. R., Clifty.
 Hill, Dr. O. W., President, Clifty.
 Johnson, Dr. W. M., Bon Air.
 Lewis, Dr. P. K., Doyle Station.
 Lewis, Dr. V. L., Crossville.
 Rhea, Dr. B. S., Sparta.
 Richards, Dr. A. F., Secretary, Sparta.
 Smith, Dr. R. E. L., Doyle Station.
 Sullivan, Dr. E. G., * Sparta.
 Young, Dr. W. B., Clifty.

WILLIAMSON COUNTY.

Cochrane, Dr. H. P., Franklin.
 Core, Dr. J. B., Bethesda.
 German, Dr. Dan, Jr., Franklin.
 Graham, Dr. W. W., Arno.
 Greer, Dr. J. W., Thompson Station.
 Henderson, Dr. Samuel, Franklin.
 Howlett, Dr. K. S., Secretary, Franklin.
 Nolen, Dr. B. T., Franklin.
 Oden, Dr. S. F., Brentwood.
 Paschall, Dr. Geo. C., Arrington.
 Shannon, Dr. J. O., President, Franklin.
 White, Dr. S. W., Franklin.

WILSON COUNTY.

Bratton, Dr. Thos. O., President, Lebanon.
 Bone, Dr. Jas. R., Secretary, Lebanon.
 Edgerton, Dr. H. K., Lebanon.
 Eskew, Dr. A. O., Lebanon.
 Keen, Dr. Geo. R., Lebanon, R. R. No. 2.
 McFarland, Dr. J. J., Lebanon, R. R. No. 4.
 McFarland, Dr. J. W., Lebanon.
 Oldham, Dr. D. P., Mt. Juliet.
 Tillery, Dr. L. L., Lebanon.
 Weaver, Dr. J. M., Mt. Juliet, R. R. No. 5.
 Young, Dr. C. V., Lebanon.

INDEX TO VOLUME II.

| | PAGE | | PAGE |
|--|------------|--|------------|
| A Comparison of the Various Tuberculin Tests in the Early Diagnosis of Tuberculosis. Wm. Litterer, A.M., M.D. | No. 4 137 | Epidemic Meningitis. John Overton, M.D. | No. 5 149 |
| Acute Glaucoma from the Standpoint of Those Other than Ophthalmologists. E. C. Ellett, M. D. | No. 4 134 | Episcleritis. Treatment. Geo. H. Price, M.D. | No. 6 209 |
| Amebic Dysentery and Appendicostomy. John P. Bates, M. D. | No. 2 56 | Extraction of the Opaque and Partially Opaque Lens in Its Capsule. Dr. L. B. Graddy, M.D. | No. 3 94 |
| American Journal of Physiologic Therapeutics | No. 12 364 | General Considerations in the Surgery of the Mastoid. Richmond McKinney, A.M., M.D. | No. 9 272 |
| A Word from the Druggists. Mr. H. C. Shapard | No. 6 203 | Histories of Neurotic Families. J. Lanski, M. D. | No. 12 345 |
| Book Notices | No. 2 82 | Indications for Surgical Intervention in Peptic Ulcer—Choice of Operation. Jno. A. Gaines, M.D. | No. 6 185 |
| Cancer of the Breast. Geo. R. West, M.D. | No. 2 51 | Intestinal Obstruction. J. W. Braudau, M.D. | No. 3 88 |
| Cancer of the Stomach, Including Statistics of the Sites and Frequency of Cancer in the Entire Digestive Tract. Chas. P. McNabb, M.D. | No. 5 174 | Intubation and Antitoxination in the Worst Forms of Laryngeal Diphtheria. J. M. Troutt, M.D. | No. 3 97 |
| Cancer of the Stomach; Pylorctomy. B. B. Cates, M.D. | No. 6 205 | Intussusception in Children. John Overton, M.D. | No. 11 331 |
| Coccidioidal Granuloma and Blastomycosis in the Central Nervous System. Newton Evans, M.D. | No. 5 166 | Leukaemia. R. J. McFall, M.D. | No. 2 73 |
| Conference of the Council on Medical Education and of the Committee on Medical Legislation of the American Medical Association | No. 12 356 | Lung Puncture as a Therapeutic Measure. T. J. Coble, M.D. | No. 6 195 |
| Congenital Calculus in Prostatic and Membranous Urethra of a Seven-Year-Old Boy. W. D. Sumpter, M.D. | No. 7 213 | Melancholia. Hazle Padgett, M.D. | No. 9 277 |
| Councilors | No. 1 2 | Membranous Croup. G. E. Vaughan, M.D. | No. 2 65 |
| Death from Ether Anesthesia. W. M. McCabe, M.D. | No. 10 314 | Minutes—General Session | No. 1 11 |
| Definite Terms in Diseases of the Stomach. E. H. Jones, M.D. | No. 6 200 | Minutes—House of Delegates | No. 1 20 |
| Diagnosis and Treatment of Eczema. J. M. King, B.S., M.D. | No. 7 227 | Multiple Sclerosis, with Report of Case. S. T. Rucker, M.D. | No. 12 343 |
| Early Diagnosis of Gall Stone Disease. Jno. E. Cannady, M.D. | No. 7 237 | Neurasthenia. Jno. W. Stevens, M.D. | No. 8 250 |
| Eczema of Infancy and Childhood. Jno. Clear, M.D. | No. 6 207 | Officers of County Medical Societies. | No. 1 2 |
| Eclampsia. C. L. Goodrich, M.D. | No. 10 310 | Officers of Association. | No. 1 1 |
| Editorial. 35, 79, 117, 145, 184, 211, 238, 267, 289, 315, 336, 355 | | Perineal Prostatectomy. Report of an Interesting Case. Geo. R. Livermore, M.D. | No. 6 197 |
| | | Physiologic Laws Governing the Action of Purgatives. Geo. E. Petty, M.D. | No. 3 103 |
| | | President's Address | No. 1 5 |
| | | Primary Malignant Tumors of the Osseous System. W. A. Bryan, M.D. | No. 8 241 |
| | | Rational Drug Therapy. E. R. Zemp, B.S., M.D. | No. 6 188 |

| | PAGE | | PAGE |
|--|------------|---|------------|
| Report of Some Interesting Cases of Appendicitis. J. Hugh Carter..... | No. 3 85 | The Diagnosis and Treatment of Amebic Ulceration of the Large Intestine. A. B. Cooke, M.D. | No. 11 325 |
| Report of Surgical Clinic. M. C. McGannon, M.D. | No. 12 351 | The Dissemination of Typhoid. R. L. Jones, M.D. | No. 10 293 |
| Report of Some Inoperable Tumors Successfully Treated by the X-Ray. W. S. Lawrence, M.D. | No. 4 121 | The Neuroses. J. Lanski | No. 7 233 |
| Reports of County Societies | No. 12 365 | The Management of Transverse Presentations in Labor. J. B. Murfree, M.D. | No. 8 257 |
| Index to Volume II | No. 12 375 | The Mortality and Morbidity of Appendicitis. C. N. Cowden, M.D. | No. 8 261 |
| Sarcoma of the Ovary, with Report of Case. E. C. Demoss, M. D. | No. 12 348 | The Ocular Complications of Nephritis. Hilliard Wood, M.D. | No. 9 269 |
| Smallpox in Shelby County. N. F. Raines, M.D. | No. 7 216 | The State Sanatorium in the Prevention and Cure of Tuberculosis. Dora Lee Wilder, M. D. | No. 3 109 |
| Some Points on the Scientific and Economic Sides of the Meat Question. Chas P. McNabb, M.D. | No. 12 341 | Therapeutic Suggestions. Jno. W. Stevens, M.D. | No. 9 280 |
| Spread of Tuberculosis. S. M. Miller, M.D. | No. 8 255 | Tracoma. C. B. Wylie, M.D. | No. 10 306 |
| Surgery of the Thyroid Gland. R. M. McCown, M.D. | No. 2 46 | Treatment of Pelvic Inflammations. E. M. Sanders, M.D. | No. 10 300 |
| Surgical Types of Abdominal Tuberculosis. W. D. Haggard, M.D. | No. 4 126 | Treatment of Typhoid Fever. Jno. Thomas Moore, M.D. | No. 7 220 |
| Squint and Its Treatment. Walter Dotson, M.D. | No. 2 39 | Typhoid Fever, Prognosis and Treatment. T. E. Abernathy, M.D. | No. 10 296 |
| The Bacteriology of Typhoid Fever. Wm. Litterer, A.M., M.D. | No. 9 285 | Woman in the Field of Medicine. Dora Lee Wilder, M.D. | No. 11 323 |
| The Correction of Uterine Displacements. C. N. Cowden, M.D..... | No. 11 317 | | |

Send front covers

JUN 4 - 1909

JOURNAL

NEW
INDEX
S. D. O.

OF THE

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II.

NASHVILLE, TENN., MAY, 1909.

No. 1

Table of Contents.

| | PAGE |
|---|-------|
| Officers of Association | 1 |
| Councilors | 2 |
| Officers County Medical Societies | 2-4 |
| President's Address | 5-11 |
| Minutes—General Session | 11-20 |
| Minutes—House of Delegates | 20-34 |
| Editorial | 35-37 |
| Advertisements | 38-40 |

UNIVERSITY OF NASHVILLE

MEDICAL DEPARTMENT

Established 1850

Nearly 5,000 Graduates

FACULTY

HON. JAMES D. PORTER, A.M., LL.D., Chancellor

WILLIAM G. EWING, Ph.G., M.D.

Dean, Professor of Materia Medica and
Therapeutics.

SIDNEY S. CROCKETT, M.D.

Professor of Obstetrics.

M. C. McGANNON, M.D., C.M., Sec'y

Professor of Diseases of Women and Ab-
dominal Surgery.

L. B. GRADY, M.D.

Professor of Diseases of the Eye, Ear, Nose
and Throat.

JAMES M. KING, B.S., M.D.

Professor of Chemistry and Clinical Der-
matology.

LARKIN SMITH, M.D.

Professor of Pathology, Bacteriology, and
Hygiene.

CHARLES BROWER, M.D.

Professor of Surgery.

EDWIN G. WOOD, M.D., C.M.

Professor of Practice of Medicine, Clinical
Medicine and Nervous Diseases.

ALBERTO HUDSON, M.D.

Professor of Descriptive and Regional
Anatomy.

JOSEPH P. KELLER, A.B., M.D.

Professor of Physiology.

The fifty-eighth session begins September 15, 1908, and closes April 30, 1909. The course covers a period of four years, of seven and one-half months each.

REQUIREMENTS FOR ADMISSION—A preliminary education equivalent to a high school course.

A graded course is so arranged that the first two years are devoted to Anatomy, Bacteriology, Chemistry, Histology, Materia Medica and Pharmacy, and Physiology; the last two years to the practical branches.

The hospital facilities furnished by the Nashville City Hospital, the St. Thomas and the Woman's Hospital and the patients from the Dispensary will be utilized for clinical teaching.

A large number of the graduates of this institution secure hospital appointments in the various cities of the United States.

For information, address

DR. WILLIAM G. EWING, DEAN

MARKET AND ELM STS.

NASHVILLE, TENNESSEE

JOURNAL

— OF THE —

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II.

NASHVILLE, TENN., JUNE, 1909.

No. 2

Table of Contents.

| | PAGE |
|---|-------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii iv |
| Squint and Its Treatment— <i>Dr. Walter Dotson</i> | 39-45 |
| Surgery of the Thyroid Gland— <i>R. M. McCown, M.D.</i> | 46-51 |
| Cancer of the Breast— <i>Geo. R. West, M.D.</i> | 51-55 |
| Amebic Dysentery and Appendicostomy— <i>John Pelham Bates, M.D.</i> | 56-65 |
| Membranous Croup— <i>G. E. Vaughan, M.D.</i> | 65-72 |
| Leukaemia— <i>R. J. McFall, M.D.</i> | 73-78 |
| Editorial | 79-82 |
| Book Notices | 82-84 |
| Advertisements | 84-86 |

University of Nashville

Department of Medicine



AREFULLY graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements of the Council on Medical Education of the American Medical Association regarding preliminary education and curriculum.

Adequate clinical facilities in every department of medicine and surgery will be provided. *A modern hospital is to be erected at once by the Trustees of the University in the center of the square less than two blocks north of the college, this land being part of the original grant by the State of North Carolina in 1785. Every department of the new hospital will be under the control of the Medical Faculty.*

Besides the foregoing facilities daily clinics at the college will be maintained. This school will continue to avail itself of the same clinical privileges as heretofore at the Nashville City Hospital and St. Thomas Hospital. The clinical privileges at the Woman's Hospital of Tennessee are exclusively for the students of this college.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore has been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements, provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

REQUIREMENTS FOR ADMISSION

To the first-year class are as follows: (a) A diploma from an accredited college of arts or sciences; (b) a certificate from a college preparatory school acceptable for entrance to the freshman class in the leading universities in America; (c) a certificate showing that the applicant has completed a four-year high school course; or, in the absence of either of the above credentials, a certificate from a state superintendent of public instruction attesting to the fact that the applicant has been regularly examined and that his educational qualifications are at least those required of a high school graduate of his state. Provided: that any condition for deficiency shall not exceed that allowed by the Association of American Medical Colleges, and that said condition must be removed before the beginning of the second year counted towards the medical degree. Applicants failing to meet any one of the above requirements within six weeks after the opening of the session must be examined by a board appointed by the State Superintendent of Public Instruction at Nashville.

The next session will open September 15th and continue thirty-two weeks exclusive of holidays. For catalog or special information, address

DR. M. C. McGANNON, Dean

631 Second Avenue, South

Nashville, Tennessee

JUL 29 1909

JOURNAL

OF THE

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II.

NASHVILLE, TENN., JULY, 1909.

No. 3

Table of Contents.

| | PAGE |
|---|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| Report of Some Interesting Cases of Appendicitis— <i>J. Hugh Carter</i> | 85-87 |
| Intestinal Obstruction— <i>J. W. Brandau, M.D.</i> | 88-93 |
| Extraction of the Opaque and Partially Opaque Lens in Its Capsule— <i>Dr. L. B. Graddy</i> | 94-97 |
| Intubation and Antitoxination in the Worst forms of Laryngeal Diphtheria— <i>J. M. Troutt, M.D.</i> | 97-103 |
| Physiologic Laws Governing the Action of Purgatives— <i>Geo. E Petty, M.D.</i> | 103-109 |
| The State Sanatorium in the Prevention and Cure of Tuberculosis— <i>Dora Lee Wilder, M.D.</i> | 109-116 |
| Editorial | 117-120 |
| Advertisements | 121-123 |

University of Nashville

Department of Medicine



CAREFULLY graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements of the Council on Medical Education of the American Medical Association regarding preliminary education and curriculum.

Adequate clinical facilities in every department of medicine and surgery will be provided. *A modern hospital is to be erected at once by the Trustees of the University in the center of the square less than two blocks north of the college, this land being part of the original grant by the State of North Carolina in 1785. Every department of the new hospital will be under the control of the Medical Faculty.*

Besides the foregoing facilities daily clinics at the college will be maintained. This school will continue to avail itself of the same clinical privileges as heretofore at the Nashville City Hospital and St. Thomas Hospital. The clinical privileges at the Woman's Hospital of Tennessee are exclusively for the students of this college.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore has been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements, provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

REQUIREMENTS FOR ADMISSION

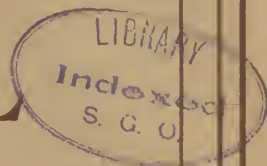
To the first-year class are as follows: (a) A diploma from an accredited college of arts or sciences; (b) a certificate from a college preparatory school acceptable for entrance to the freshman class in the leading universities in America; (c) a certificate showing that the applicant has completed a four-year high school course; or, in the absence of either of the above credentials, a certificate from a state superintendent of public instruction attesting to the fact that the applicant has been regularly examined and that his educational qualifications are at least those required of a high school graduate of his state. Provided: that any condition for deficiency shall not exceed that allowed by the Association of American Medical Colleges, and that said condition must be removed before the beginning of the second year counted towards the medical degree. Applicants failing to meet any one of the above requirements within six weeks after the opening of the session must be examined by a board appointed by the State Superintendent of Public Instruction at Nashville.

The next session will open September 15th and continue thirty-two weeks exclusive of holidays. Address all communications to

DR. J. P. KELLER, Secretary,
142 Seventh Avenue, North, or

E. F. TURNER, Registrar,
631 Second Avenue, South, Nashville, Tenn.

JOURNAL
OF THE
Tennessee State Medical Association



Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., AUGUST, 1909. No. 4

Table of Contents.

| | PAGE |
|--|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| Report of Some Inoperable Tumors Successfully Treated by the X-Ray.— <i>W. S. Lawrence, M.D.</i> | 121-126 |
| Surgical Types of Abdominal Tuberculosis.— <i>William D. Hag-</i> <i>gard, M.D.</i> | 126-134 |
| Acute Glaucoma from the Standpoint of those other than Oph- thalmologists.— <i>E. C. Ellett, M.D.</i> | 134-137 |
| A Comparison of the Various Tuberculin Tests in the Early Diagnosis of Tuberculosis.— <i>Wm. Litterer, A.M., M.D.</i> | 137-144 |
| Editorial | 145-148 |
| Advertisements | 149-151 |

UNIVERSITY OF NASHVILLE, AND UNIVERSITY OF TENNESSEE.

DEPARTMENT OF MEDICINE.

Combination of teaching force, equipment, and the joint support of two
of the oldest institutions in the southwest.



AREFULLY graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements of the Council on Medical Education of the American Medical Association regarding preliminary education and curriculum.

Adequate clinical facilities in every department of medicine and surgery will be provided. *A sixty-five bed hospital will be in operation September 1, 1909, in the center of the square less than two blocks north of the college, this land being part of the original grant by the State of North Carolina in 1785. Every department of the new hospital will be under the control of the Joint Medical Faculty.*

Besides the foregoing facilities daily clinics at the college and the very large free dispensary to be maintained; this school will continue to avail itself of the same clinical privileges as heretofore at the Nashville City Hospital and St. Thomas Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore has been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements, provided at great expense, the prestige of the College will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

REQUIREMENTS FOR ADMISSION

To the first-year class are as follows: (a) A diploma from an accredited college of arts or sciences; (b) a certificate from a college preparatory school acceptable for entrance to the freshman class in the leading universities in America; (c) a certificate showing that the applicant has completed a four-year high school course; or, in the absence of either of the above credentials, a certificate from a state superintendent of public instruction attesting to the fact that the applicant has been regularly examined and that his educational qualifications are at least those required of a high school graduate of his state. Provided: that any condition for deficiency shall not exceed that allowed by the Association of American Medical Colleges, and that said condition must be removed before the beginning of the second year counted towards the medical degree. Applicants failing to meet any one of the above requirements within six weeks after the opening of the session must be examined by a board appointed by the State Superintendent of Public Instruction at Nashville.

The next session will open September 8th and continue thirty-two weeks exclusive of holidays. For catalogue or special information, address

DR. J. P. KELLER, Secretary,
142 Seventh Avenue, North, or

E. F. TURNER, Registrar,
631 Second Avenue, South, Nashville, Tenn.

SEP 13 1909

JOURNAL

OF THE

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., SEPTEMBER, 1909. No. 5

Table of Contents.

| | PAGE |
|---|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| Epidemic Meningitis.— <i>John Overton, M.D.</i> | 149-166 |
| Coccidioidal Granuloma and Blastomycosis in the Central Nervous System.— <i>Newton Evans, M.D.</i> | 166-174 |
| Cancer of the Stomach, Including Statistics of the Sites and Frequency of Cancer in the Entire Digestive Tract.— <i>Charles P. McNabb, M.D.</i> | 174-183 |
| Editorial | 184 |
| Advertisements | 185-187 |

UNIVERSITY OF NASHVILLE, AND UNIVERSITY OF TENNESSEE.

DEPARTMENT OF MEDICINE.

Combination of teaching force, equipment, and the joint support of two
of the oldest institutions in the southwest.



CAREFULLY graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements of the Council on Medical Education of the American Medical Association regarding preliminary education and curriculum.

Adequate clinical facilities in every department of medicine and surgery will be provided. *A sixty-five bed hospital will be in operation September 1, 1909, in the center of the square less than two blocks north of the college, this land being part of the original grant by the State of North Carolina in 1785. Every department of the new hospital will be under the control of the Joint Medical Faculty.*

Besides the foregoing facilities daily clinics at the college and the very large free dispensary to be maintained; this school will continue to avail itself of the same clinical privileges as heretofore at the Nashville City Hospital and St. Thomas Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore has been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements, provided at great expense, the prestige of the College will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

REQUIREMENTS FOR ADMISSION

To the first-year class are as follows: (a) A diploma from an accredited college of arts or sciences; (b) a certificate from a college preparatory school acceptable for entrance to the freshman class in the leading universities in America; (c) a certificate showing that the applicant has completed a four-year high school course; or, in the absence of either of the above credentials, a certificate from a state superintendent of public instruction attesting to the fact that the applicant has been regularly examined and that his educational qualifications are at least those required of a high school graduate of his state. Provided: that any condition for deficiency shall not exceed that allowed by the Association of American Medical Colleges, and that said condition must be removed before the beginning of the second year counted towards the medical degree. Applicants failing to meet any one of the above requirements within six weeks after the opening of the session must be examined by a board appointed by the State Superintendent of Public Instruction at Nashville.

The next session will open September 8th and continue thirty-two weeks exclusive of holidays. For catalogue or special information, address

DR. J. P. KELLER, Secretary,
142 Seventh Avenue, North, or

E. F. TURNER, Registrar,
631 Second Avenue, South, Nashville, Tenn.

JOURNAL

OF THE

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., OCTOBER, 1909.

No. 6

Table of Contents.

| | PAGE |
|---|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii iv |
| Indications for Surgical Intervention in Peptic Ulcer—Choice of Operation— <i>John T. Gaines, M.D.</i> | 185-188 |
| Rational Drug Therapy— <i>E. R. Zemp, B.S., M.D.</i> | 188-195 |
| Lung Puncture as a Therapeutic Measure— <i>T. J. Coble, M.D.</i> | 195-197 |
| Perineal Prostatectomy—Report of an Interesting Case— <i>Geo. R. Livermore, M.D.</i> | 197-200 |
| Definite Terms in Diseases of the Stomach— <i>E. H. Jones, M.D.</i> | 200-202 |
| A Word from the Druggists— <i>Mr. H. C. Shapard.</i> | 203-204 |
| Cancer of the Stomach; Pylorectomy— <i>Benjamin B. Cates, M.D.</i> | 205-207 |
| Eczema of Infancy and Childhood— <i>John Clear, M.D.</i> | 207-208 |
| Episcleritis, Treatment— <i>Geo. H. Price, M.D.</i> | 209-210 |
| Editorial | 211-212 |
| Advertisements | 213-215 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. J. P. KELLER, Secretary,

142 Seventh Avenue, North, or

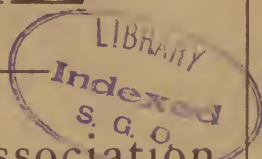
E. F. TURNER, Registrar,

631 Second Avenue, South, Nashville, Tenn.

JOURNAL

OF THE

Tennessee State Medical Association



Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., NOVEMBER, 1909.

No. 7

Table of Contents.

| | PAGE |
|---|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| Congenital Calculus in Prostatic and Membranous Urethra of a Seven-Year-Old Boy— <i>Wm. D. Sumpter, M.D.</i> | 213-215 |
| Smallpox in Shelby County— <i>N. F. Raines, M.D.</i> | 216-219 |
| Treatment of Typhoid Fever— <i>John Thomas Moore, M.D.</i> | 220-227 |
| Diagnosis and Treatment of Eczema— <i>J. M. King, B.S., M.D.</i> | 227-232 |
| The Neuroses— <i>J. Lanski</i> | 233-237 |
| Early Diagnosis of Gall Stone Disease— <i>John Egerton Cannady M.D.</i> | 237 |
| Editorial | 238-240 |
| Advertisements | 241-244 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. J. P. KELLER, Secretary,

142 Seventh Avenue, North, or

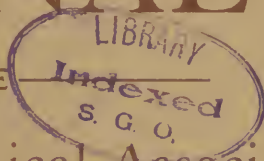
E. F. TURNER, Registrar,

631 Second Avenue, South, Nashville, Tenn.

JOURNAL

OF THE

Tennessee State Medical Association



Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., DECEMBER, 1909. No. 8

Table of Contents.

| | PAGE |
|---|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| Primary Malignant Tumors of the Osseous System— <i>W. H. Bryan, M.D.</i> | 241-250 |
| Neurasthenia— <i>J. W. Stevens, M.D.</i> | 250-255 |
| Spread of Tuberculosis— <i>S. M. Miller, M.D.</i> | 255-257 |
| The Management of Transverse Presentations in Labor— <i>J. B. Murfree, M.D.</i> | 257-261 |
| The Mortality and Morbidity of Appendicitis— <i>Chas. N. Cowden, M.D.</i> | 261-266 |
| Editorial | 267-268 |
| Advertisements | 269-272 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. J. P. KELLER, Secretary,

142 Seventh Avenue, North, or

E. F. TURNER, Registrar,

681 Second Avenue, South, Nashville, Tenn.

JOURNAL

OF THE

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., JANUARY, 1910.

No. 9

Table of Contents.

| | PAGE |
|--|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| The Ocular Complications of Nephritis— <i>Hilliard Wood., M.D.</i> | 269-272 |
| General Considerations in the Surgery of the Mastoid.— <i>Richard McKinney, A.M., M.D.</i> | 272-276 |
| Melancholia— <i>Hazle Padgett, M.D.</i> | 277-279 |
| Therapeutic Suggestion— <i>John W. Stephens, M.D.</i> | 280-285 |
| The Bacteriology of Typhoid Fever— <i>Wm. Litterer, A.M., M.D.</i> | 285-288 |
| Editorial | 289-292 |
| Advertisements | 293-296 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. J. P. KELLER, Secretary,

142 Seventh Avenue, North, or

E. F. TURNER, Registrar,

631 Second Avenue, South, Nashville, Tenn.

RECEIVED
SURGEON GENERAL'S OFFICE
FEB 24 1910

JOURNAL

OF THE

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE
ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

Indexed
S. G. O.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., FEBRUARY, 1910. No. 10

Table of Contents.

| | PAGE |
|---|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| The Dissemination of Typhoid— <i>R. L. Jones, M.D.</i> | 293-295 |
| Typhoid Fever—Prognosis and Treatment— <i>T. E. Abernathy, M.D.</i> | 296-300 |
| Treatment of Pelvic Inflammations— <i>E. M. Sanders, M.D.</i> | 300-305 |
| Trachoma— <i>C. B. Wylie, M.D.</i> | 306-310 |
| Eclampsia— <i>C. L. Goodrich, M.D.</i> | 310-313 |
| Death from Ether Anaesthesia— <i>W. M. McCabe.</i> | 314 |
| Editorial | 315-316 |
| Advertisements | 317-320 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. J. P. KELLER, Secretary,

142 Seventh Avenue, North, or

E. F. TURNER, Registrar,

631 Second Avenue, South, Nashville, Tenn.

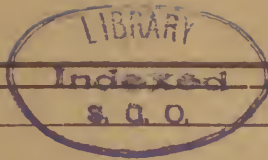
THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL

IN addition to the General and Laboratory Courses, and to full work on the Cadaver and in the Operating Rooms in every branch of Surgery and Eye, Ear and Throat Diseases, the following SPECIAL COURSES, requiring three to five weeks to complete, are now being given: Surgical Diagnosis, Infant Feeding and Physical Diagnosis of Infants, Diseases of the Stomach, Abdominal Diagnosis and Intestinal Diseases, Cystoscopy (three courses), Tropical Medicine, Serum Therapy, Tuberculosis, Rectal Diseases, Refraction, Non-Operative Gynecology, X-Ray and Electrotherapeutics. Special booklets descriptive of these courses on application.

SECOND AVENUE AND TWENTIETH ST.

FREDERIC BRUSH, M. D., MEDICAL SUPERINTENDENT

| | |
|--|--|
| | |
| | |
| | |



JOURNAL

— OF THE —

Tennessee State Medical Association

Published Monthly Under the Direction of the Board of Trustees

OFFICE OF PUBLICATION, 146 EIGHTH AVE., NORTH, NASHVILLE, TENNESSEE

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

SUBSCRIPTION, \$2.00 PER YEAR

VOL. II. NASHVILLE, TENN., MARCH, 1910. No. 11

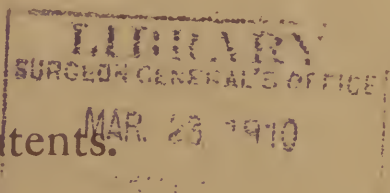


Table of Contents.

| | PAGE |
|--|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| The Correction of Uterine Displacements— <i>C. N. Cowden, M.D.</i> | 317-323 |
| Woman in the Field of Medicine— <i>Dora Lee Wilder, M.D.</i> | 323-325 |
| The Diagnosis and Treatment of Amebic Ulceration of the Large Intestine— <i>A. B. Cooke, M.D.</i> | 325-331 |
| Intussusception in Children— <i>John Overton, M.D.</i> | 331-335 |
| Editorial | 336-340 |
| Advertisements | 341-343 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. J. P. KELLER, Secretary,

142 Seventh Avenue, North, or

E. F. TURNER, Registrar,

631 Second Avenue, South, Nashville, Tenn.

APR 12 1910

OF THE

LIBRARY
Indexed
S. G. U.
association

ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN.

VOL. II. NASHVILLE, TENN., APRIL, 1910. No. 12

| | PAGE |
|--|---------|
| Officers of Association | i |
| Councilors | ii |
| Officers County Medical Societies | ii-iv |
| Some Points on the Scientific and Economic Sides of the Meat Question— <i>Chas. P. McNabb, M.D.</i> | 341-343 |
| Multiple Sclerosis, with Report of Case— <i>S. T. Rucker, M.D.</i> | 343-345 |
| Histories of Neurotic Families— <i>J. Lanski, M.D.</i> | 345-348 |
| Sarcoma of the Ovary, with Report of Case— <i>E. C. Demoss, M.D.</i> | 348-351 |
| Report of Surgical Clinic— <i>M. C. McGannon, M.D.</i> | 351-356 |
| Conference of the Council on Medical Education and of the Committee on Medical Legislation of the American Medical Association | 356-364 |
| American Journal of Physiologic Therapeutics | 364-365 |
| Reports of County Societies | 365-373 |
| Index to Volume II | 375-376 |

University of Nashville

— AND —

University of Tennessee

DEPARTMENT OF MEDICINE



COMBINATION of the teaching force and equipment with the joint support of two of the oldest universities in the Southwest.

Carefully graded theoretical and practical course based upon thorough laboratory and clinical instruction. This school conforms in every particular to the requirements regarding preliminary education and curriculum of the American Medical Association.

Adequate clinical facilities in every department of medicine and surgery are provided. The Tennessee Hospital was formally opened September 16th, 1909. Senior and Junior students have practical clinical instruction five days each week in the five-room Dispensary and in the wards of this well-equipped hospital in addition to the clinical facilities heretofore enjoyed by our students. A large and modern hospital will soon be erected in the center of the square less than two blocks north of the college. Every department of the new hospital will be under the control of the Joint Medical Faculty, as is the Tennessee Hospital.

The comprehensiveness of the curriculum and the thoroughness of instruction heretofore have been such that more than fifty of our graduates of 1908 and 1909 have received appointments in many of the leading hospitals of the United States. With the additional improvements provided at great expense, the prestige of the University will not only be maintained, but the opportunities for such valuable experience for our graduates will be greatly increased.

The requirements for admission to the first-year class are a four-year high school course or equivalent.

The session continues thirty-two weeks, exclusive of holidays.

For catalog or special information, address

DR. R. O. TUCKER, Dean,
631 Second Avenue, South,

DR. J. P. KELLER, Secretary,
142 Seventh Avenue, North, or

E. F. TURNER, Registrar,
631 Second Avenue, South, Nashville, Tenn.